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Illinois Medical Journal

THE OFFICIAL JOURNAL OF

The Illinois State Medical Society

INDEX TO VOLUME 81

JANUARY TO JUNE, 1942

N.Y. ACADEMY
OF MEDICINE
AUG 20 1942
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Illinois Medical Journal

OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY

Vol. 81, No. 1 JANUARY, 1942 $3.00 a Year

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Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY, SPRINGFIELD, MAY 19, 20, 21, 1942

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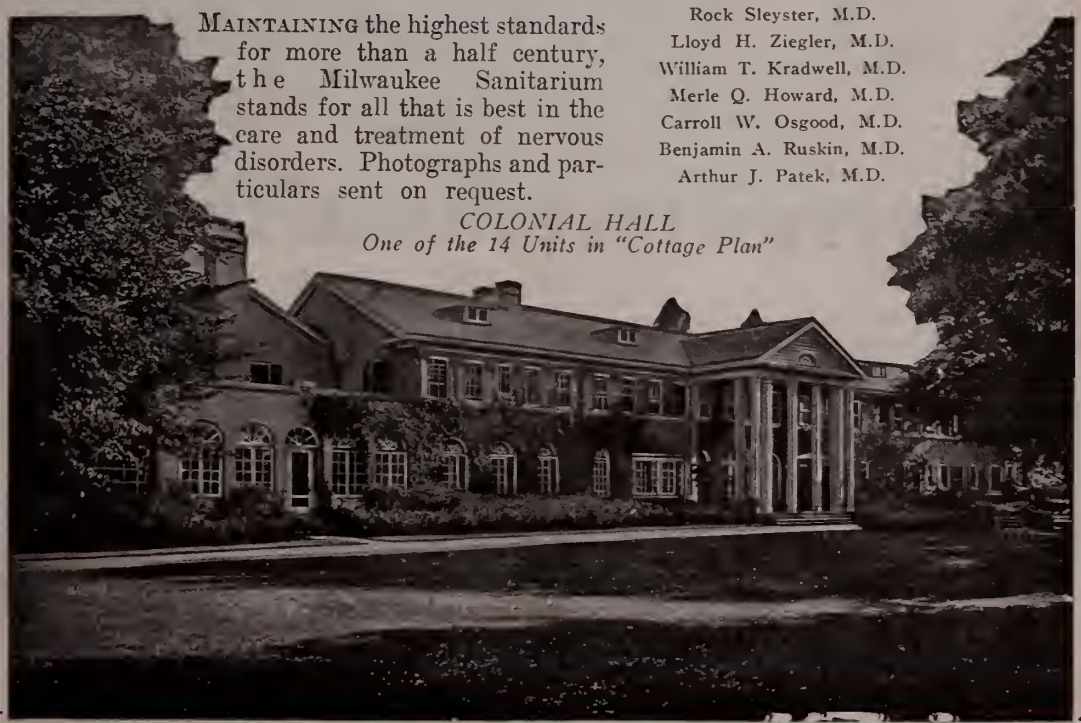
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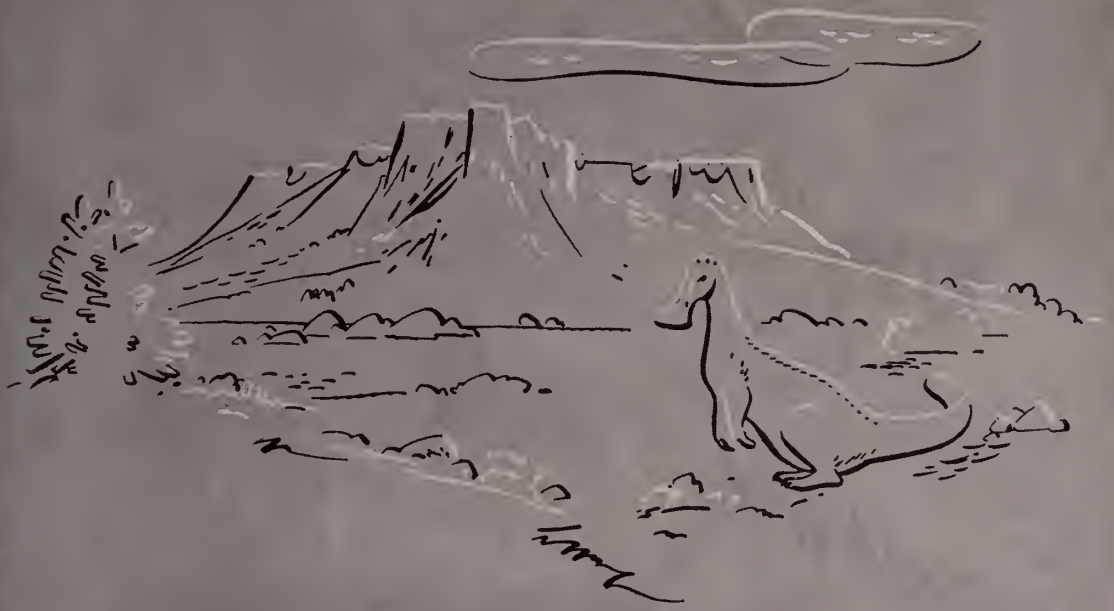
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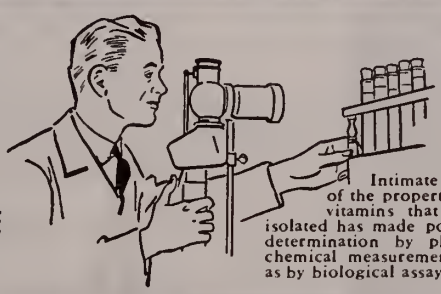
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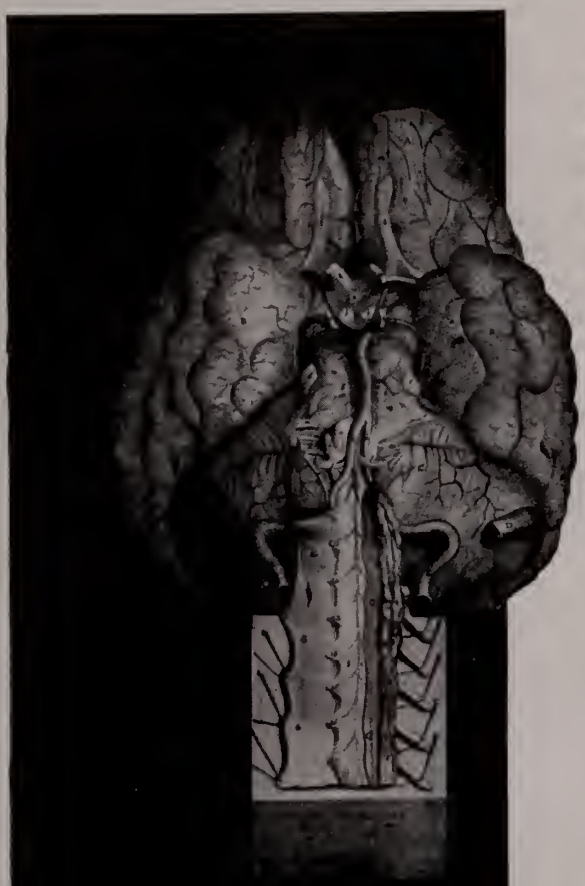


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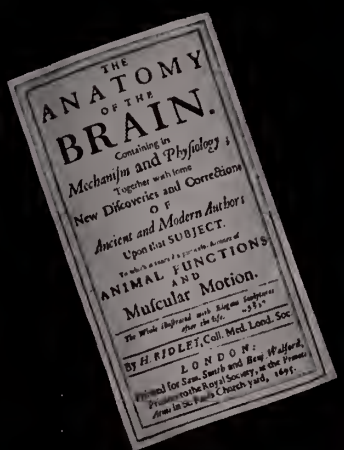
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1. Council Report: J.A.M.A., 113: 1734, 1939
2. Merritt, H. H. & Putnam, T. J.: A. J. Psychiat., 96: 1023, 1940

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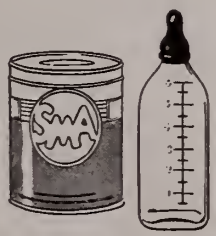
(1) 1932. J. Am. Med. Assoc. 98, 1429
1938. Nutrition Abstracts and Reviews 8, 281.
1938. J. Am. Med. Assoc. 110, 650.
1940. J. Am. Diet. Assoc. 16, 891.

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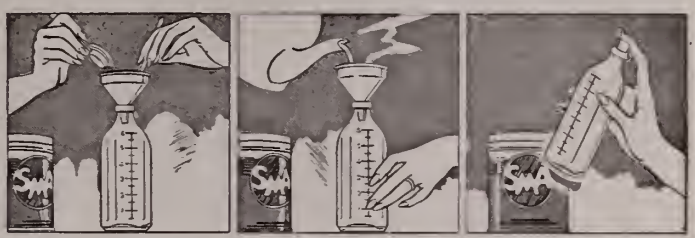
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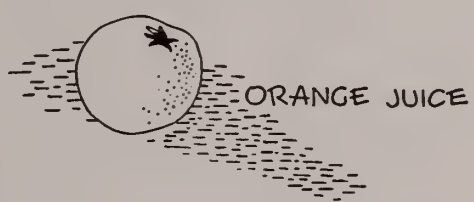
2. Add enough warm, previously boiled water to make one ounce.

3. Cap bottle and shake into solution. Feed at body temperature.

THIS IS THE WAY IT IS FED

The quantity and number of feedings in 24 hours should be the same as that taken by the normal breast-fed infant.

THIS IS THE ONLY SUPPLEMENT REQUIRED . .



AND THIS (in a nutshell) is the Easy, Economical Way used by an ever-increasing number of physicians to insure excellent nutritional results.



S.M.A. CORPORATION • 8100 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

Do your patients know

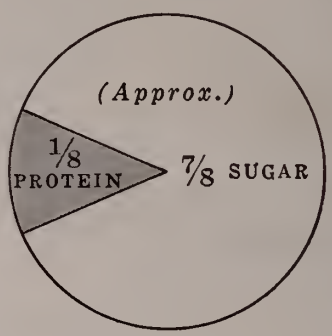
the difference between gelatine dessert powders

and Knox Gelatine?

KNOX GELATINE



READY-FLAVORED GELATINE DESSERT POWDERS



Physicians recognize Knox Gelatine (U.S.P.) as an excellent source of supplementary protein. Perhaps you are already prescribing it to some of your patients. If so, be sure they understand the difference between plain, unflavored Knox Gelatine and ready-flavored gelatine dessert powders.

Gelatine dessert powders are about 85% sugar, only about 10% gelatine. Knox Gelatine is all protein. It contains absolutely no sugar or other substances to cause gas or fermentation. It is manufactured under rigid bacteriological control to maintain purity and quality.

Your hospital will procure Knox for your patients if you specify it by name.

For amino acid analysis and information regarding the protein value of Knox Gelatine, use coupon below.

K N O X
G E L A T I N E
(U.S.P.)
is plain, unflavored gelatine—
All protein, no sugar

Send This Coupon for Useful Dietary Booklets

☐ The Diabetic Diet ☐ Infant Feeding ☐ Peptic Ulcer
☐ The Protein Value of Plain, Unflavored Gelatine ☐ Reducing Diets and Recipes

KNOX GELATINE, Johnstown, N. Y., Dept. 483
Please send me FREE booklets for the medical profession as checked.

NAME

ADDRESS





Provide Pregnant Women with the Calcium They Need

in a product they'll like

DURING pregnancy and lactation the calcium and phosphorus needs are increased. The intake of these elements must be sufficient to provide for individual needs plus those required for the baby.

If it weren't for the facts . . . that most commonly used foods are low in calcium . . . and that pregnant women are often "choosey" about food . . . it might not be necessary to supply extra calcium. However, it is often advisable to prescribe a dietary supplement which will provide adequate amounts of calcium, phosphorus and the Vitamin D which is necessary for the proper utilization of these minerals.

For years, thousands of physicians have prescribed Dicalcium Phosphate Compound with Viosterol Squibb. They have found it a pleasant and sure way of providing calcium, phosphorus and Vitamin D in therapeutically effective quantities. The product is supplied in two forms—tablets, with an appealing candy-like wintergreen flavor—and capsules, as a change from the routine use of tablets.

During pregnancy and lactation, the usual dose is one or two tablets t. i. d. Each tablet supplies 9 grains dicalcium phosphate, 6 grains calcium gluconate and 660 U.S.P. XI units of Vitamin D. Two capsules are equivalent to 1 tablet.

Tablets Dicalcium Phosphate Compound with Viosterol Squibb are supplied in boxes of 51 and 250; the capsules in bottles of 100 and 1000.

SQUIBB

Dicalcium Phosphate Compound with Viosterol

TABLETS · · · CAPSULES

For Disruption of a Vicious Circle in Urogenital Infections

PAIN variously distributed

FREQUENCY

URGENCY

NOCTURIA

DYSURIA

PYURIA

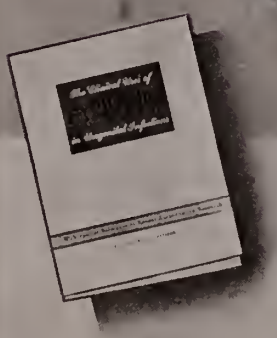
HESITANCY

TENESMUS

PYRIDIUM

REG. U. S. PAT. OFF.

(Phenylazo-alpha-alpha-diamino-pyridine mono-hydrochloride)



A copy of this new Pyridium booklet will be forwarded on request.

"The testimony of the literature leads to the conviction that pyridium is of decided clinical value in many inflammatory conditions of the genito-urinary tract."

(Reynolds, J. S., Wilkey, J. L., and Choy, J. K. L., Clinical application and results of pyridium therapy, Illinois M. J. 78:544-547, Dec. 1940.)

PYRIDIUM

TRADE MARK

(Phenylazo-Alpha-Alpha-Diamino-Pyridine Mono-Hydrochloride)

A decade of service in urogenital infections

MERCK & CO. Inc. *Manufacturing Chemists* RAHWAY, N. J.

ANDROGENIC THERAPY

in the MALE CLIMACTERIC

Characterized by

NERVOUSNESS • IRRITABILITY • IMPOTENCE • LASSITUDE

• Douglas, *J. Urol.*, 1941, 45:404, in a study extending over a period of 3 years, of 58 cases of the male climacteric, found that testosterone propionate afforded "genuinely desirable clinical results." A dose of 20 mg a week by intramuscular injection was used, and a total dosage of 100 mg was required in the average case for recovery. • Miller *et al.*, *Proc. Soc. Exper. Biol. and Med.*, 1938, 38:538, reported that the use of testosterone propionate in six cases of the male climacteric resulted in marked increase of potency and libido and favorable changes in mental attitude. • Werner, *J.A.M.A.*, 1939, 112:1441, reported that the use of testosterone propionate in two cases of the male climacteric brought about marked improvement after 3 months of treatment.

ROCHE-ORGANON, INC. • ROCHE PARK • NUTLEY • NEW JERSEY

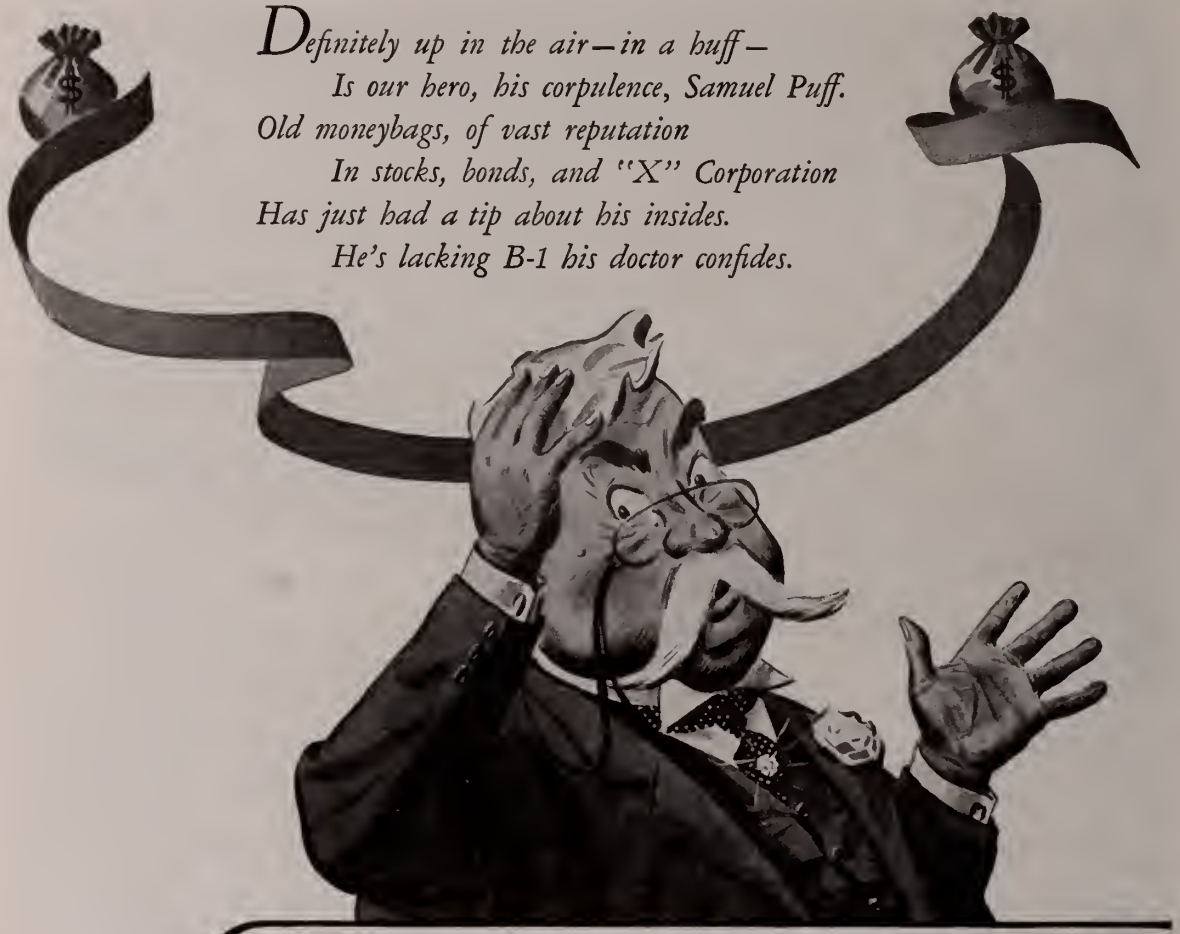
In Canada: Roche-Organon (Canada), Ltd. • *Montreal* • *Toronto*

PACKAGES: Neo-Hombreol Ampuls: 5, 10, 25 mg in boxes of 3, 6, and 50. Neo-Hombreol (M) Tablets, 10 mg, in boxes of 15, 30, and 100. Neo-Hombreol (M) Dosules, 4 mg, in boxes of 25.

NEO-HOMBREOL

(TESTOSTERONE PROPIONATE — 'ROCHE-ORGANON')

Definitely up in the air—in a huff—
Is our hero, his corpulence, Samuel Puff.
Old moneybags, of vast reputation
In stocks, bonds, and "X" Corporation
Has just had a tip about his insides.
He's lacking B-1 his doctor confides.



Rich Man, POOR MAN and others, too, may require the addition of Vitamin B_1 to their diet.

Wyeth's BEWON ELIXIR

REG. U. S. PAT. OFF. REG. U. S. PAT. OFF.

"CLINICAL EVALUATION of the American dietary indicates that large groups of our population live on diets on the borderline of adequacy of Vitamin B_1."*

When the diet requires the addition of thiamin, Wyeth's Bewon Elixir provides a pleasant means of insuring an adequate supply of this important substance, without disturbing the normal dietary routine. It also serves as an excellent vehicle for many medicaments.

Wyeth's Bewon Elixir is a palatable elixir containing 500 International Units of Vitamin B_1 in each fluid ounce. It is available in pint and gallon bottles.

*Reimann, H. A.: Treatment in General Medicine, 1941 Progress Volume. Phila., F. A. Davis Co., 1941

JOHN WYETH & BROTHER, INC., PHILADELPHIA



Gently Borne

ON TO ITS GOAL

The rhythmic movement of the gentle wave carries the fallen leaf to the shore without harm to its fragile structure. Similarly, the gentle rhythmic movement of the peristaltic wave induced by AGAROL assures certain evacuation of the already softened intestinal contents.

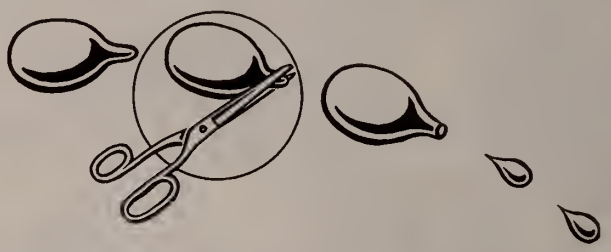
High viscosity agar-emulsified mineral oil makes possible the softening of the intestinal contents and thus prepares the ground for the peristaltic stimulus provided by the highly purified white phenolphthalein present in Agarol. Thus Agarol adequately furnishes the three principal requirements for the relief of constipation: softening, lubrication, peristaltic stimulation.

Agarol is supplied in 6, 10 and 16 ounce bottles. If you desire a trial supply, please write us on your letterhead.

WILLIAM R. WARNER & CO., INC.
113 West 18th Street - - - New York City

AGAROL

New strategy in giving Vitamins A and D to infants . . .



VI-DELTA CLIPSULES

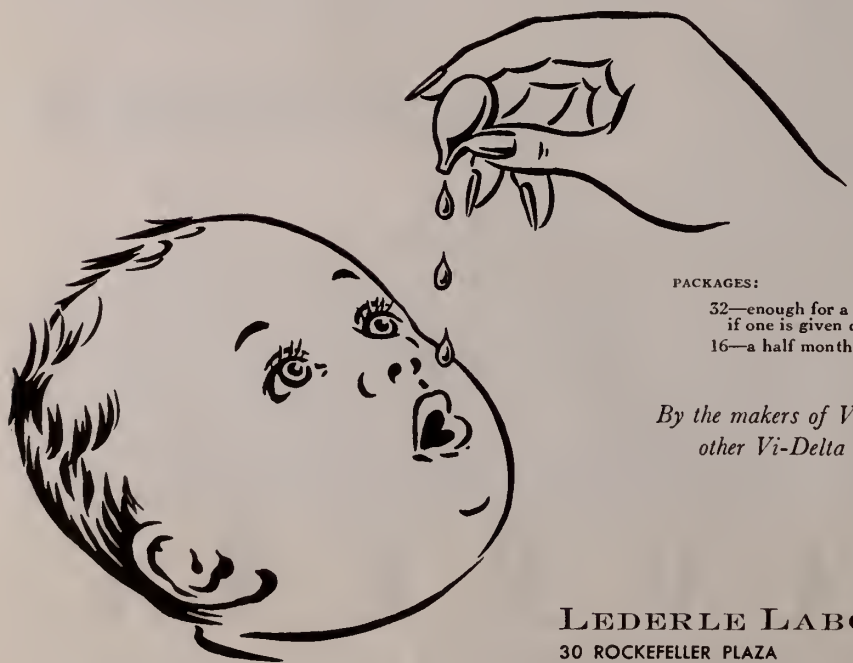
Lederle

Vi-Delta Clipsules embody an ingenious idea for assuring an accurate and consistent intake of Vitamins A and D. These Clipsules are specially designed soft gelatin grapes with a tip on one end.

The technique is simple!

All the mother has to do is clip off the tip with scissors and squeeze the accurately measured concentrate into the infant's mouth.

It's all over in an instant—no spoon, no measuring, no spilling, no mess. A big improvement over the dropper bottle method with its doubtful accuracy. Mothers appreciate these convenience factors. Each of the Vi-Delta Clipsules contains 3,000 U.S.P. XI Units of Vitamin A and 800 U.S.P. XI Units of Vitamin D. The concentrate is oil-free, digestible and free of fishy taste or odor.



PACKAGES:

32—enough for a month's supply for baby, if one is given daily.
16—a half month's supply.

By the makers of Vi-Delta Emulsion and other Vi-Delta Vitamin products.

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA NEW YORK, N. Y.



SELECTIVE CHEMOTHERAPY

For antibacterial chemotherapy there are available a number of related compounds. All have proved highly useful though they differ somewhat in their selective action against the various pathogenic organisms.

Neoprontosil is especially effective against hemolytic streptococci and is of particular value in many infections which are encountered commonly in everyday practice.

Because of its bactericidal action against the invaders of the urinary tract Neoprontosil is efficacious in infections caused by colon, aerogenes and dysentery bacilli and hemolytic streptococci.

Neoprontosil is also employed in some conditions requiring prolonged treatment, particularly ulcerative colitis, because of its relatively lower toxicity.

ORAL AND PARENTERAL MEDICATION

For oral use, Neoprontosil is supplied in tablets of 5 grains and capsules of 3 grains, and for parenteral administration in ampules and in bottles of 2.5 per cent solution and 5 per cent solution.

NEOPRONTOSIL

Trademark Reg. U. S. Pat. Off. & Canada

Brand of AZOSULFAMIDE

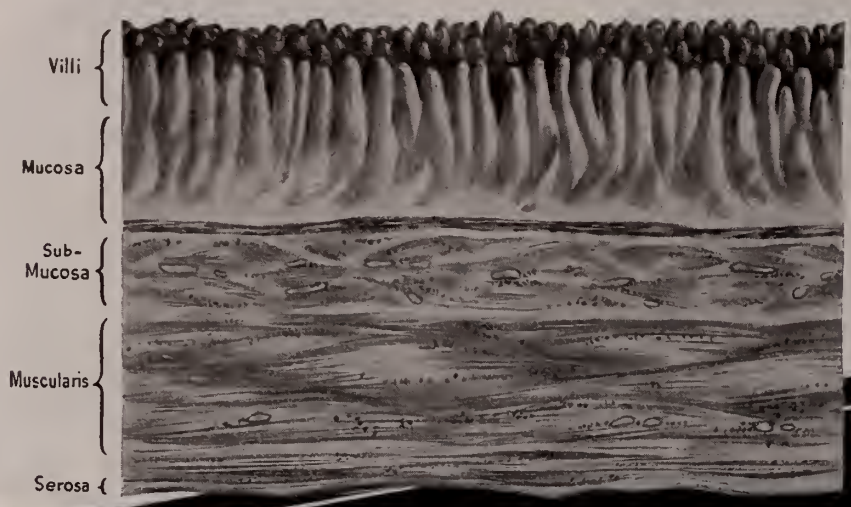
Disodium 4-sulfamido-phenyl-2-azo-7-acetyl-amino-1-hydroxynaphthalene 3,6-disulfonate

Winthrop Chemical Company, Inc.

Pharmaceuticals of merit for the physician

NEW YORK, N. Y. WINDSOR, ONT.

826M

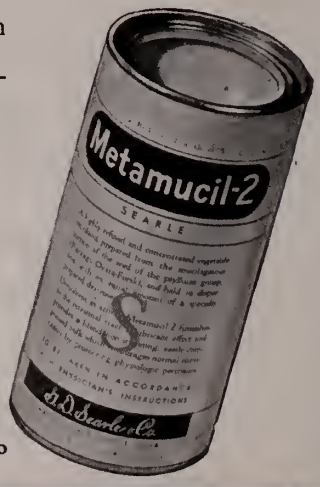


Semi-diagrammatic section of the colon

HANDLE WITH CARE..

How to regulate a spastic bowel and overcome constipation without irritating or damaging the fragile mucosa? There's a simple answer now. **Metamucil-2** is so highly refined and smooth in texture that its bland bulk stimulates peristalsis gently—without trauma to the intestinal wall.

This purified extract of Plantago Ovata (Forsk) is combined with a special dextrose base which mixes easily with water or fruit juices, and is pleasant to take—another feature which makes its use particularly advantageous in the management of constipation.



On your prescriptions specify the new

Metamucil-2 (Green Label)

Supplied in 1-lb., 8-oz. and 4-oz. containers.

G·D·SEARLE & CO.

Ethical Pharmaceuticals Since 1888

CHICAGO

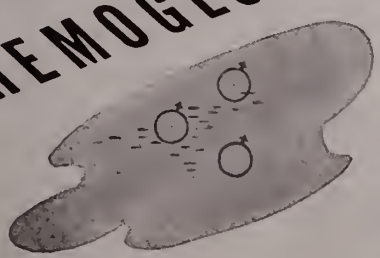
New York Kansas City San Francisco

SEARLE



Help Build a

NORMAL HEMOGLOBIN



● When iron reserves are depleted and the daily intake is low, help build a normal blood picture with the aid of Hematinic Plastules.*

This modern therapy provides soluble ferrous iron in a well tolerated, easily assimilated form. Small doses effect a prompt improvement in most cases of iron deficiency and secondary anemia.

When you think of iron—

℞ HEMATINIC PLASTULES PLAIN
Suggested dosage—1 T. I. D. after meals.
or
HEMATINIC PLASTULES *with* LIVER CONCENTRATE
Suggested dosage—2 T. I. D. after meals.

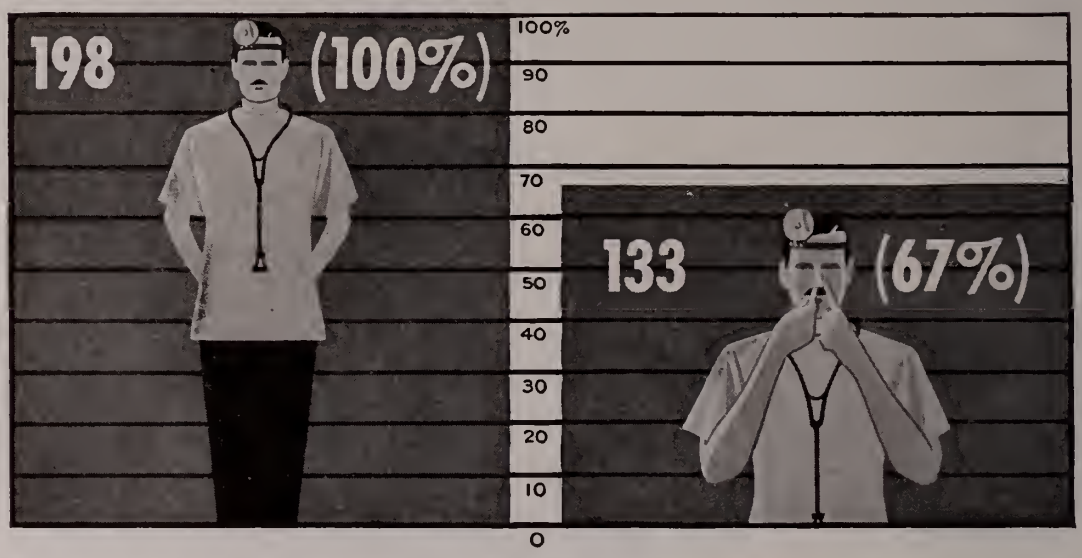
BOTTLES OF 50 AND 100

*REG. U. S. PAT. OFF.

THE BOVININE COMPANY
8134 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

365 Physicians Were Interviewed

Of 198 Specialists, 67% Used BENZEDRINE INHALER Personally



Of the 167 general practitioners, 126, or 75%, used Benzedrine Inhaler personally. Of the 198 specialists, 133, or 67%, used Benzedrine Inhaler personally.

The physicians interviewed were picked at random from the Directory of the America Medical Association, and like other phys cians had received our usual three sampl mailings of Benzedrine Inhaler during th past year.

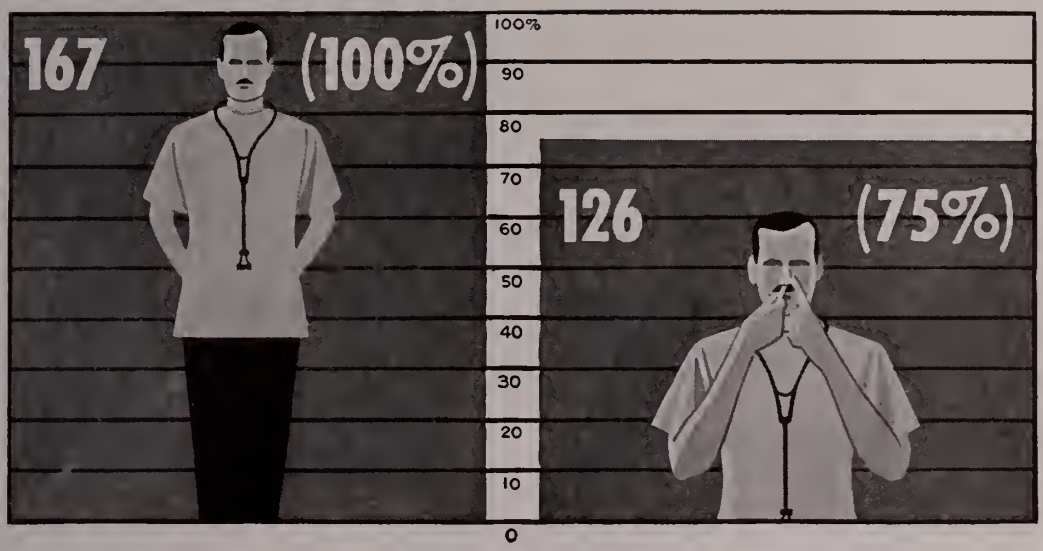
Each tube is packed with amphetamine, S.K.F., 32 mg.; oil of lavender, 97 mg.; menthol, 32 mg. Benze rine is S.K.F.'s trademark, Reg. U. S. Pat. Off.

Could there be a more convincing demonstration of confidence in Benzedrine Inhaler? No wonder specialists and general practitioners alike prescribe and recommend it so frequently for head colds, hay fever and sinusitis.

PHILADELPHIA, PA. ESTABLISHED 1841

In Seven Representative Cities . .

Of 167 General Practitioners, 75% Used BENZEDRINE INHALER Personally



Two previous advertisements of this series have reported that in a nation-wide survey:

1. Of 594 physicians interviewed, 428, or 72 per cent, used Benzedrine Inhaler personally, and 308 actually produced their Inhaler.

2. Of 206 physicians interviewed in three representative cities, 124, or 60 per cent, stated that Benzedrine Inhaler was used by their own families.

This advertisement reports another significant finding:

In seven representative areas the physicians interviewed were classified from the A.M.A. Directory as general practitioners or specialists. This latter group included rhinologists, otolaryngologists, ophthalmologists, pediatricians and gynecologists. Certain specialists, who would normally have no occasiou to prescribe Benzedrine Inhaler in their practice, were excluded.

BENZEDRINE INHALER

SMITH, KLINE & FRENCH LABORATORIES



*"So Little Understood and So Lightly Respected . . ."**

Few symptoms can be more distracting and unnerving than the agonizing torment of pruritus ani, and few require so thorough a diagnostic search for their underlying cause. But through the specific antipruritic influence of Calmitol Ointment relief can be given the patient at the first visit. Calmitol stops itching, regardless of cause, and for prolonged periods. Thus, even before the etiologic process is identified and corrected, subjective comfort can be achieved and maintained by the application of Calmitol Ointment directly onto the involved area.

Thos. Leeming & Co. Inc.

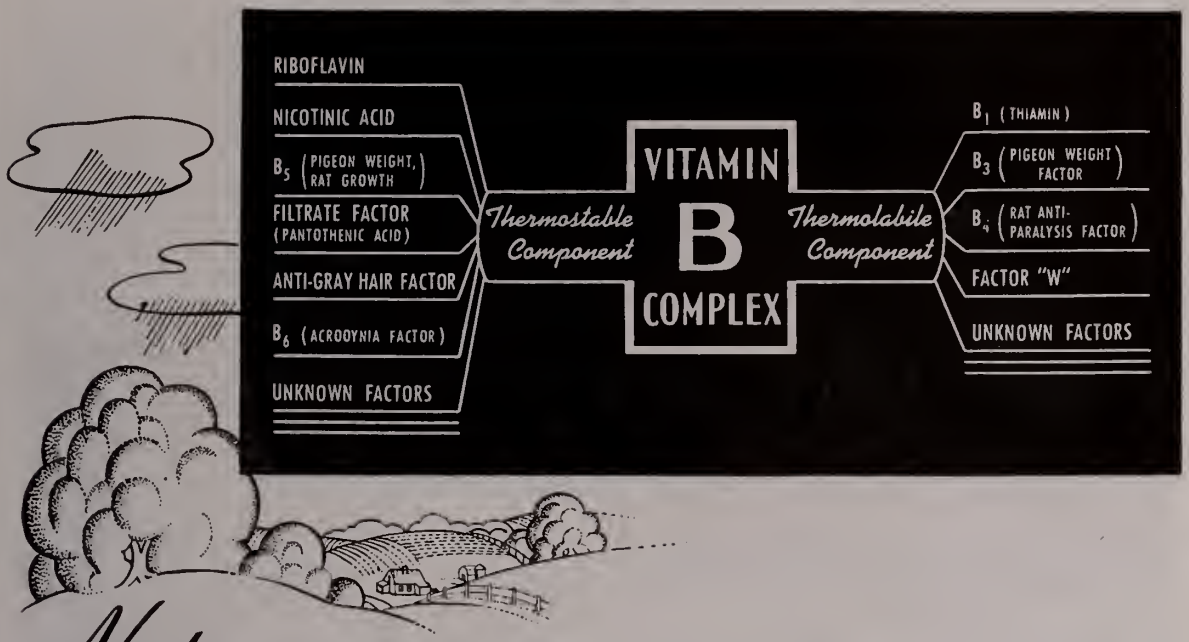
101 West 31st Street, New York

CALMITOL

THE DEPENDABLE ANTI-PRURITIC

Calmitol contains chlor-iodo-camphoric aldehyde, levohyoscine oleinate, and menthol, incorporated in an alcohol-chloroform-ether vehicle. Pruritus is controlled through its blocking action upon cutaneous receptor organs and nerve endings. Calmitol is protective, bacteriostatic, and induces mild active hyperemia which aids in disposal of toxins.

*Hermance, O. W., and Bacon, H. E.: Pruritus Ani, in Piersol, G. M.: Cyclopedia of Medicine, Philadelphia, F. A. Davis Company, 1934, vol. 10, p. 1135.



Nature CONSTRUCTS THE FORMULA

Whole Natural B Complex with its 16 or more distinct vitamins, is the choice of nutritional investigators today.

BEZON meets all your requirements for optimum Vitamin B Complex therapy; it contains all the factors; it is a natural-source product; it is easily administered; it is so potent that a single capsule supplies the full daily requirement of thiamin and riboflavin, together with all the other natural B factors.

B E Z O N

Trade Mark

WHOLE NATURAL B COMPLEX

Each capsule contains:

Thiamin	(Vitamin B_1)	1000 micrograms
Riboflavin	(Vitamin G)	1000 micrograms
Nicotinic Acid	(P-P Factor)	150 micrograms
Pyridoxine	(Vitamin B_6)	35 micrograms
Pantothenic Acid	(Filtrate Factor)	225 micrograms

together with all the other known members of the Natural B Complex.

Dose: Prophylactic—1 capsule
Therapeutic—as individual case requires.

Now Available: **BEZON in bottles of 100 as well as bottles of 30 capsules.**

Products of Nutrition Research Laboratories are promoted only through the medical profession.

BEZON NOW AVAILABLE IN BOTTLES OF 100 AS WELL AS 30 CAPSULES



NUTRITION RESEARCH LABORATORIES

4210 Peterson Avenue, Chicago, Illinois, Dept. I. M. 1

Gentlemen: Please send me a professional sample of Bezon.

Dr.....

Address.....

City..... State.....

EVERY LIFE IS MORTGAGED TO *Fatigue*

PAYMENT MUST BE MADE PROMPTLY IN *Sleep*



By natural law everyone's life is mortgaged to fatigue and payment must be made promptly in sleep.

Under normal conditions the average individual has no difficulty in meeting this obligation; on the other hand, there are many patients who, because of mental states or other factors, frequently find sleep impossible to obtain without the use of a mild hypnotic.

Preparations employed to induce sleep should have a wide margin of safety and induce relaxation and hypnosis promptly, without causing preliminary excitation or unpleasant after-effects. These advantages are exhibited to a remarkable degree by 'Delvinal' Sodium Vinobarbital Sodium.

'Delvinal' Sodium is an efficient sedative and hypnotic with a safe therapeutic index. The induction period is relatively brief, the duration of action moderate, and excitation or other undesirable side-effects uncommon. 'Delvinal' Sodium is indicated not only for the relief of functional insomnia, but also as a sedative in various psychiatric conditions and for preoperative sedation, preanesthetic hypnosis, and obstetrical sedation and amnesia.

'Delvinal' Sodium is supplied in dry-filled gelatin capsules of three strengths:

½ gr. (Brown) No. 41:
Bottles of 100, 500 and 1000.

1½ gr. (Orange) No. 42:
Bottles of 25, 100, 500 and 1000.

3 gr. (Orange and Brown)...No. 43:
Bottles of 25, 100, 500 and 1000.

'DELVINAL' SODIUM
VINOBARBITAL SODIUM

Sharp & Dohme



DON'T JUDGE THE WORTH OF THIS *Portable* X-RAY UNIT BY ITS SIZE

BECAUSE the G-E Model F-3 Office-Portable X-Ray Unit seems so small in size, and its price is moderate, don't overlook its practical diagnostic range and its ability to produce radiographs of high quality.

The G-E Model F-3 is a unit that you can rely upon for satisfactory, dependable x-ray performance within its range—in your office or at the patient's bedside—wherever adequate roentgenological service is not otherwise available.

Think what a valuable assistant the F-3 could be. Then, why not do as hundreds of value-wise medical men did? Judge the F-3 strictly on performance. See this fine unit right in your own office. Then you can actually use and handle the F-3 just as you would in your daily practice. And you'll get first-hand information about its refined, simplified control and its unusual flexibility.

Here's all you have to do to arrange for this interesting demonstration: Just clip, sign, and mail the convenient coupon, today. We'll do the rest.

---CLIP, SIGN, and MAIL, TODAY---

I'm interested in an actual working demonstration of the G-E Model F-3 Office-Portable X-Ray Unit. When next in this vicinity, please have your representative arrange with me for a time most convenient to me.

*Name*_____

*Address*_____

*City*_____

C11

GENERAL ELECTRIC X-RAY CORPORATION

2012 JACKSON BLVD. CHICAGO, ILL., U. S. A.

A New Year— An Old Code

JANUARY – beginning of a year which promises strenuous times. With an organization trained in the art of doing things well, Eli Lilly and Company will maintain its high standards, will not deviate from the policy of close co-operation with the medical profession, and will constantly strive for – Progress Through Research.



ELI LILLY AND COMPANY

INDIANAPOLIS, INDIANA, U. S. A.

The Illinois Medical Journal

January, 1942

VOL. 81, NO. 1

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Philip H. Kreuscher, Harry Culver.

Editorials

ALL OUT FOR AMERICA

On December 7th, the Japanese attacked Pearl Harbor with most disastrous results, without a previous declaration of war. The following day Congress declared war against Japan, and since that time our armed forces have given a good account of themselves indeed. The war now is truly world wide, and regardless of previous individual feelings on the subject of war, all America is united as never before, and all of one accord, agree that we must unite our efforts in winning.

For the duration, political affiliations are forgotten and all are anxious to follow the leadership of our Commander in Chief. Fortunately the medical profession of this country has been preparing for just such an emergency for the past fifteen months. Thousands of physicians are serving their country in the various essential branches of service, and thousands of others will be called within the near future. Only the organized medical profession can give much of the service essential in the procurement and assignment program for physicians to serve their country.

At the present time more than 25,000 physicians have been giving much time in the work of the several boards under the Selective Service System. This work will be continued, even though it perhaps will operate somewhat differently during the second year. Efforts are being made to organize Civilian Defense Units in all parts of the United States, and physicians will have an important function in this setup, which seems more essential each day.

With the plans which have been formulated over a period of more than fifteen months, the medical profession is able to be of much service to the Government in these various capacities, and assurances have been given that our organizations and committees are ready to do those duties assigned to them.

More attention will no doubt be given at this time and in the immediate future, to protecting the civilian population while physicians are being called to service. The highly important matter of adequate medical care to employees in essential industries likewise will receive more consideration than was given in the last war.

There are duties to be performed for his country by every physician physically able to carry on his work. The medical profession has had many important duties in all wars in which this country has been a participant, and in this emergency, the response will be as satisfactory as it has been in the past.

There will be many calls in the near future for mass production of blood plasma for emergency use in the armed forces and with the preparations which have been in the making during recent months, it will be possible to find millions of donors willing to give blood for this worthy cause. In many respects, the United States is better prepared at this time than it has been at the outbreak of previous wars, and with the all out efforts on the part of every profession, in-

dustry, agriculture and business in general, we will have no shortage of the many essential products and food.

Our Commander in Chief will find that the medical profession of this country is ready and willing to assume responsibility for the many demands which may be made upon it at any time.

☆ ☆ ☆

Physicians desiring to enlist in the Services of the United States Army or Navy in this present emergency, living in Illinois or other states in the Sixth Corps Area, should address their applications to the office of the Commanding General, Headquarters Sixth Corps Area, U. S. Post Office Building, Chicago, Illinois. All communications addressed to this office, will receive prompt attention.

A TRIBUTE TO MEDICINE

The front cover of the Journal of the American Medical Association, under date of December 13, 1941, published fine tributes to the medical profession of this country, received from James C. Magee, Major General, United States Army, The Surgeon General; Paul V. McNutt, Director, Office of Defense Health and Welfare Services; and Ross T. McIntire, Rear Admiral, United States Navy, The Surgeon General.

Their statements were as follows:

The present very cooperative and effective relationship between the Army Medical Department and those great bodies representative of the civil medical profession give assurance that during the present emergency medico-military affairs will be administered with the greatest possible degree of efficiency to the Army and to the civil population of our country. JAMES C. MAGEE, Major General, United States Army, The Surgeon General.

The mobilization and utilization of the medical profession have been placed in the hands of the profession itself through the establishment of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. I am sure we may rely, as always in the past, on the patriotism of the American medical profession. Paul V. McNutt, Director, Office of Defense Health and Welfare Services.

The Medical Department of the Navy ex-

ILLINOIS STATE MEDICAL SOCIETY

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J. S. Templeton	At	Large, Pinckneyville	1944
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Original articles and membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

presses its deep appreciation to the medical profession of our country. Now that war is actually upon us, the Navy will need more medical officers. It has no fear regarding its needs being met; the past has shown whole-hearted cooperation. This war must come to a successful conclusion. I am convinced that the medical profession will do its part to bring that about. ROSS T. McINTIRE, Rear Admiral, United States Navy, The Surgeon General.

PAPERS FOR THE 1942 ANNUAL MEETING

The 1942 annual meeting of the Illinois State Medical Society will be held in Springfield on May 19, 20, 21. Plans are now being made for the scientific programs to be presented before the individual sections and for the general meetings.

Physicians desiring to present papers at this meeting should communicate as early as possible with the officers of the section before which they desire to present a paper. Each section has a chairman and a secretary one residing in Cook County and the other down-state and it is advisable to keep this in mind when writing the section officers.

On account of the fact that the number of papers to be presented before each section will be limited, it is desirable that the best possible program be developed, and one which will appeal to the physicians as a whole rather than to a few members of individual specialties.

In writing to the proper section officer, it is advisable to give the title of the paper you desire to present, then give either an abstract of the paper on other information concerning it, so that the officers will be better able to judge the merits of the paper in considering the advisability of scheduling same on their respective programs.

The personnel of the several section officers is as follows:

Section on Medicine
F. Garm Norbury, Chairman, Jacksonville
M. Herbert Barker, Secretary, 700 N. Michigan Ave., Chicago

Section on Surgery
Loyal Davis, Chairman, 54 East Erie Street, Chicago
J. C. Thomas Rogers, Secretary, Urbana

Section on Eye, Ear, Nose and Throat
Clifton Turner, Chairman, Peoria
G. Henry Mundt, Secretary, 30 N. Michigan Ave., Chicago

Section on Public Health and Hygiene
Walter C. Earle, Chairman, Champaign
Henry C. Niblack, Secretary, 54 West Hubbard St., Chicago

Section on Radiology
E. E. Barth, Chairman, 303 East Superior St., Chicago
Cesare Gianturco, Secretary, Urbana

Section on Pediatrics
Craig D. Butler, Chairman, 715 Lake Street, Oak Park
A. J. Fletcher, Secretary, Danville

Section on Obstetrics and Gynecology
Milton E. Bitter, Chairman, Quincy
Clyde J. Geiger, Secretary, 4753 Broadway, Chicago

Owing to the fact that these section officers responsible for the preparation of the programs for each of the scientific sections are desirous of completing their list of speakers as soon as possible, it is advisable for all members of the State Medical Society to contact the proper section officer as early as possible in order that they may have the opportunity of getting you on the program for the 1942 annual meeting.

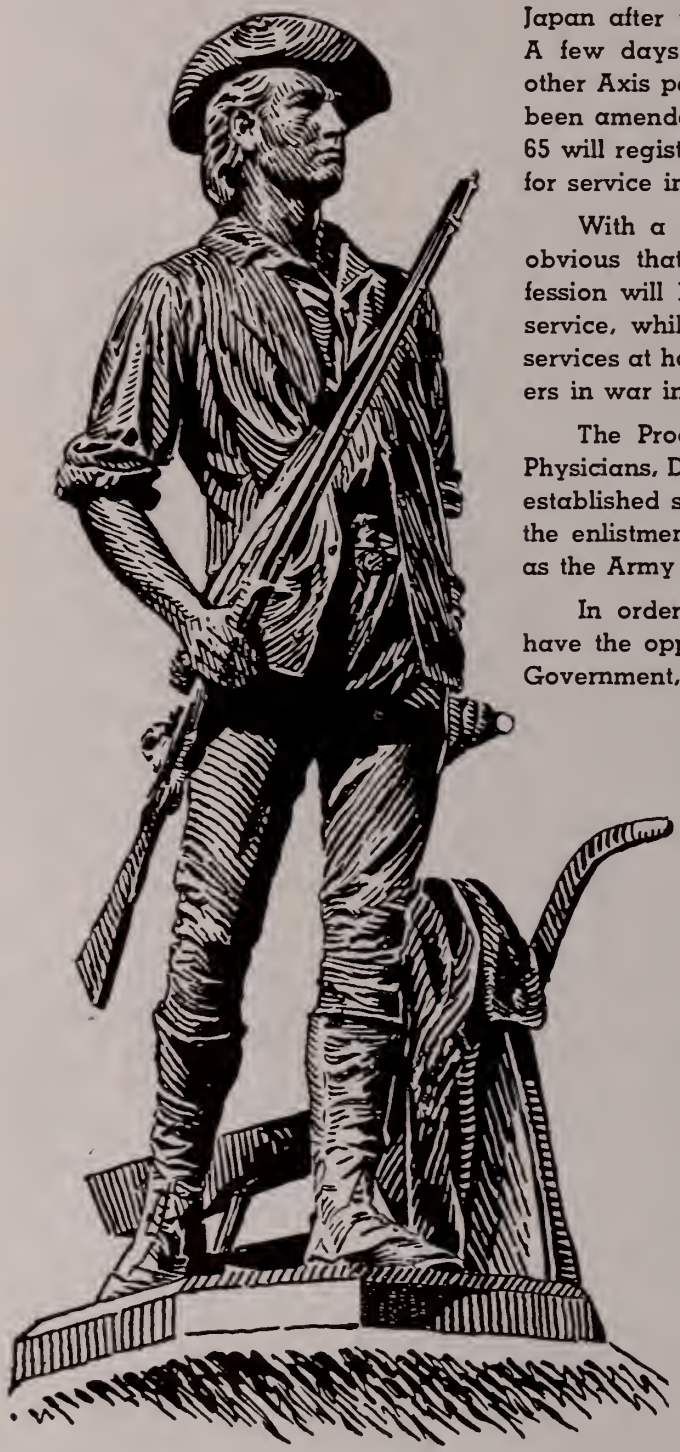
"HISTORY OF MEDICAL PRACTICE IN ILLINOIS"

A few years ago, the Illinois State Medical Society published the History of Medical Practice in Illinois, with the late Lucius H. Zeuch as editor for the volume. Subscriptions were received prior to the publication of this book, at $10.00. It was soon learned that it would be impossible to put all available historical data in one volume, and the Society decided that eventually a second volume would be published, and there would be no additional cost to subscribers.

Soon after the first volume appeared, Dr. Zeuch died, and Dr. Charles J. Whalen, then editor of the Illinois Medical Journal was selected as editor for the proposed second volume. On account of unsatisfactory conditions, it was

(Continued on page 7)

The Medical Profession Is Called



On December 8, 1941, war was declared against Japan after the cowardly assault at Pearl Harbor. A few days later war was declared against the other Axis partners. The Selective Service Act has been amended so that every man up to the age of 65 will register, and those under 45 will be eligible for service in the armed forces.

With a large army in the making, it is quite obvious that many members of the medical profession will be needed in the various branches of service, while others will be needed for essential services at home, providing adequate care for workers in war industries and for many other purposes.

The Procurement and Assignment Service for Physicians, Dentists, and Veterinarians was recently established so that less time would be required for the enlistment of the desired number of physicians as the Army and other essential services expand.

In order that every physician in Illinois may have the opportunity of offering his services to the Government, a blank is being published opposite this article in the Illinois Medical Journal which may be filled out and mailed to Dr. Sam F. Seeley, Executive Director, Procurement and Assignment Service, New Social Security Building, 4th and C Streets S.W., Washington, D. C.

Committees are now being formed in each Corps Area in the United States in individual states, and counties, to aid in every way possible this important function. It is stated that by enrolling now with the Procurement and Assignment Service all physicians, but particularly those under 45 years of age, will most likely be assigned to that service for which they are best fitted.

It is stated that by enrolling now, commissions will most likely be received in a shorter period than if the physician awaits the call through Selective Service, and is inducted into service.

The Illinois Medical Journal will give each month in its columns, all possible available information pertaining the medical services required for the Armed Forces, and will publish bulletins or releases as requested at any time by various Governmental Agencies.

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ENROLLMENT FORM FOR PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS

Dr. Sam F. Seeley, Executive Officer
Procurement and Assignment Service
New Social Security Building
4th and C Streets S.W.
Washington, D. C.

Dear Doctor Seeley:

Please enroll my name as a physician ready to give service in the Army or Navy of the United States when needed in the current emergency. I will apply to the Corps Area commander in my area when notified by your office of the desirability of such application.

Signed.....

1. Give your name in full, including your full middle name:

2. The date of your birth:

3. The place of your birth:

4. Are you married or single?

5. Have you any children? If so, how many?

6. Do you believe yourself to be physically fit and able to meet the physical standards for the Army and Navy Medical Corps?

7. Have you filled out previously the questionnaire sent to all physicians by the American Medical Association?

8. When and where were you graduated in medicine?

9. In what state are you licensed to practice?

10. Do you now hold any position which might be considered essential to the maintenance of the civilian medical needs of your community? If so, state these appointments:

11. Have you previously applied for entry into the Army or Navy Medical Service? If so, state when, where and with what result (if rejected, state why).

Signature

Date Address

decided to hold the second volume in abeyance until some future date. Since the death of Dr. Whalen, it was deemed advisable to withhold further action on account of the present emergency.

The Society has on hand at this time, a number of copies of the first volume edited by Dr. Zeuch, which contains much valuable medical historical data, well illustrated, bound in cloth and in perfect condition, which may be procured while the supply lasts, for $5.00. Physicians or libraries desiring to procure a copy of this unusual book, may send their remittance to the Secretary, and a copy will be forthcoming, post paid within a few days.

Address: Harold M. Camp, M.D., Secy.
Illinois State Medical Society,
Monmouth, Illinois.

ANOTHER "REFORM"

Once more socialized medicine is in the minds of the leaders in Washington.

Socialized medicine is not a new thing in political circles. In fact many of our social reforms are not new to the world even though they are new to Americans.

Social security is old in Europe. Old age pensions and an unemployment insurance are found in European countries. Socialized medicine, for example, is a product of the German nation.

The results of examination of the draftees reveal that fifty per cent of the nation is unfit for military service. This is sufficient to awaken a nation to a problem. The leaders in Washington seem to think that the answer to this problem is socialized medicine.

We believe that some means should be provided to aid people who are unable to care for themselves. When a person is in need of a surgical operation the operation should be performed even though the government may have to provide it. *But beyond the idea of charity we can not fully agree on the ideas of socialized medicine.*

The medical profession is highly efficient. Ten years are required to make a doctor before he starts earning his way in life. To place the medical profession on par with the civil service will remove the incentive which is the motivating factor in the creation of an alert medical fraternity.

That the nation is making progress with medicine is a matter of common knowledge. But to "socialize" medicine may be to "politicalize" it . . . and politics is never efficient.

We do not want to thwart the growth of the medical fraternity. We do not want to copy the plan of medical procedure used in Communistic Russia. For these reasons we fear to tamper with the medical progress in America. The proposition is a problem today . . . and this hour of emergency, we fear, is no time to consider such "reform" legislation.

—*McComb Daily Enterprise*

For the most part, American doctors are determinedly opposed to this drive for socialized medicine, and I must say I am with them all the way. State medicine, in my opinion, bears disaster for doctor and patient alike. You cannot pipe out medicine to the community as you do with steam heat.—Dr. A. J. Cronin, English author of "The Citadel."

VITAMIN PILLS FOR ARMY

Every American soldier in the far north is having his daily rations augmented by two vitamin tablets to compensate for the shortage of fresh food, the War Department reports. The tablets contain vitamins A, B_1, B_2, C and D.

ENCEPHALITIS VIRUSES FOUND IN MOSQUITOES

Viruses of both the St. Louis and Western equine types of encephalitis were recently discovered for the first time in mosquitoes collected in regions west of the Mississippi where the diseases were epidemic, report Dr. William McD. Hammon, and associates, of the University of California, and C. M. Gjullin, U. S. Department of Agriculture entomologist. The role of the mosquito as a carrier, however, has not yet been proved.

Tuberculosis, like all plagues, spreads most dangerously in the close contacts of the family. Resistance breaks down before a mass attack, and the steady bombardment of each other by husbands and wives, parents and children, brothers and sisters is the best of all mechanisms for perpetuating the disease. People exposed to tuberculosis in their own homes are, roughly, ten times as likely to fall sick of it as are people in the population at large. "Plague On Us" by Geddes Smith, Commonwealth Fund, 1941.

Correspondence

KEEP AMERICA STRONG

Sixth National Social Hygiene Day, one of America's leading public health events, will be observed on Wednesday, February 4, 1942, Dr. Walter Clarke, executive director, American Social Hygiene Association, announced today.

With the theme, *KEEP AMERICA STRONG, HELP BUILD BETTER HEALTH,* this year's Social Hygiene Day is directing special attention toward the full realization of the menace of organized prostitution in areas adjacent to concentrations of armed forces and in industrial centers.

Stating that physical fitness not only of military men and defense workers will be among the important factors in determining the effectiveness of our own defense effort, Dr. Ray Lyman Wilbur, former Secretary of the Interior and president of the American Social Hygiene Association, warned America that the nation's defense also depends on a healthy civilian population.

"The good work begun in national control will be cancelled, the declining attack rate of syphilis and gonorrhea will be swiftly reversed, unless to our concern with munitions and maneuvers and equipment we add specific attention to the protection of our men in the armed forces and in the factories which supply our materials," Dr. Wilbur said.

"That age-old institution, the "red-light district," is not the only factor with which venereal disease control officers and law enforcement authorities have to contend. Within the past decade, the mushroom growth of the "honky-tonk," the roadside cabin, and the roving operator whose activities are abetted greatly by the development of modern transportation, have all combined to complicate the problem.

"The repression of prostitution is a civilian community problem and one over which military authorities ordinarily have no direct control. Therefore, an effective solution of this problem will depend upon strict enforcement by the police of existing laws dealing with the practice of prostitution. The prostitute is the usual human carrier of the spirochete of syphilis and the gonococcus. Every effort should be made to make her difficult to meet. Every contact is a danger. The fewer contacts the fewer wasted lives. Enforcement of the laws that can protect your youth requires a responsible public opinion to back up police officials. In addition, such law enforcement must not merely be concerned with the activities of prostitutes themselves, but must as well extend to the owners and operators of bawdy houses, disreputable hotels, tourist camps, and "honky-tonks," where open or commercialized prostitution is tolerated."

Dr. Wilbur urged nation-wide participation in Social Hygiene Day, February 4, 1942, and asked health, civic, and welfare leaders as well as others desiring information concerning Social Hygiene Day to write to the American Social Hygiene Association, 1790 Broadway, New York, N. Y.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

The first regular Board Meeting of the year was held at the Palmer House in Chicago, Saturday, Nov. 15th. The meeting was called to order at 10:00 a. m. by the President, Mrs. Harry Otten.

The President gave a report of the Cleveland Convention and spoke of the Nutrition outline which is an important part of the program planned for this year. She also told of her visits to the various Auxiliaries and reported on their activities.

Mrs. Wanniger, President-Elect, who is also Organization Chairman reported on several visits throughout the State.

After luncheon Mrs. Otten introduced Dr. Frank P. Hammond, Chairman of the Advisory Committee, who spoke a few words of praise for the work the Auxiliary has accomplished.

The National President, Mrs. R. E. Mosiman was the next speaker. Mrs. Mosiman spoke of the importance of proper and specialized speakers for all meetings. She urged the Auxiliaries to promote the Hygeia magazine and asked that

all members know their Auxiliary. She stressed the great opportunity for organized groups today.

Mrs. John J. Ryan, National Historian, also spoke of knowing your Auxiliary and on the subject of "Living Public Relations."

COUNTY NEWS

Members of the Livingston County Medical Society and their wives, members of the Woman's Auxiliary had dinner Nov. 14th, in the private dining room of the Dixie cafe.

Following dinner, members of the Auxiliary adjourned to the home of Mrs. O. H. Law, 711 North Mill Street, where a business meeting was held. Mrs. Joseph Joss, of Dwight, presiding. Donations were made to the benevolence fund of the Illinois State Medical Society, the Livingston County Red Cross and Livingston County Tuberculosis Society.

Mrs. Charles W. Stigman,
Chairman, Press & Publicity

AMERICAN RED CROSS APPEALS FOR $50,000,000 WAR FUND

Calling for the united support of the entire nation the American Red Cross has appealed for a special war fund of $50,000,000 to carry on and expand its work among Army and Navy personnel. The appeal was broadcast to the nation through major radio networks by Red Cross Chairman Norman H. Davis.

In preparation for just such an emergency as the country now faces the Red Cross has been spending funds at the rate of more than $1,000,000 a month. However, with war in the Pacific now a reality the traditional Red Cross responsibilities to the nation and its armed forces have increased manifold and steps were taken immediately to meet these obligations, Chairman Davis said.

"Millions of Americans today desire to demonstrate their will to victory," the Chairman said. "Not all can be in the armed forces, not all can volunteer their services for humanitarian work, but all can volunteer their dollars to arm the Red Cross to be their representative at the scene of battle and distress.

"Today is the day to demonstrate our high morale, our unity, our determination to support our fighting men at the front, and to insure to the wounded and to our homeless and suffering fellow citizens in our Pacific Islands that we, as a nation, stand one hundred per cent ready to aid them through the Red Cross.

"Let the Red Cross be the spokesman for every community in America. Thus, what we do and what we give will be the triumphant expression of our humanitarian spirit and our faith in victory."

In its months of preparations the various services which the Red Cross provides to the nation and its Army and Navy have been effectively strengthened. But under the new conditions activities all along the line, on the war front and on the home front, must be rapidly expanded. By tradition, custom and Congressional Charter the Red Cross is the organization that maintains those human and family links between our fighting men and the people at home, links which mean so much to both military and civilian morale. Through its ministrations to the men on whose shoulders the safety of our country now rests the Red Cross must prove that they have the wholehearted support of every single American, it was stated. The people, united as always in an hour of peril, will pour from their hearts the means which their Red Cross needs to carry on its work.

In announcing the war fund campaign Red Cross officials pointed out that contributions would be used only in connection with the organization's war work. Membership dues collected during the November nation-wide Roll Call are needed to finance the normal, day-to-day services of the Red Cross in thousands of communities throughout the country.

DOCTORS FROM AMERICAN REPUBLICS AWARDED U. S. FELLOWSHIPS

Eight physicians from Brazil, the Dominican Republic, Mexico, Paraguay and Venezuela have been awarded fellowships for special graduate study in the U. S., it was recently announced by the Office of the Co-ordinator of Inter-American Affairs. The doctors will study at Johns Hopkins University, Baltimore; Columbia University, New York City; Massachusetts General Hospital, Boston; Henry Phipps Institute, Philadelphia; the U. S. Public Health Service, Baltimore; the District of Columbia Health Department, and the state health departments of Virginia, Georgia and New York, and the University of Michigan, Ann Arbor.

In a large group of industrial workers the proportion of the cases of tuberculosis found in a minimal stage has almost trebled since 1929. Moderately advanced cases have decreased slightly and far advanced cases are about one-third the former proportion. This change is explained largely by the fact that in recent years fluoroscopic examinations of the chest (and roentgenograms when indicated) have been made prior to employment and as part of the annual routine examinations of all employees of the Metropolitan Life Insurance Company. From Bulletin of Met. Life Ins. Co.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

At the request of the chairman of the Committee on Medical Economics, we submitted an article early in the month on various obligations to the Government on the part of the medical profession in connection with our National Defense. Since that article was written, new history has been made. First came the attack on Pearl Harbor which will go down in history as one of the most cowardly efforts to cripple a nation before war had been declared. Then the Japanese struck in some twenty different places at the same time showing unmistakable evidence that plans for this type of assult had been completed before the Japanese envoy started on his long trip to Washington with the avowed intention of maintaining peace between the two nations.

With the United States engaged in a two ocean war against all of the Axis powers, the responsibilities of the medical profession have been increased enormously. Medicine had been planning for some 18 months for any type of emergency, and much of the preliminary work had been done to demonstrate to our Government the facilities which organized medicine would have available in the event of war.

At this time it is stated, there are some 13,000 physicians in our armed forces, and it has been estimated that 7,000 would be needed for each additional million men called to service. It is quite obvious that Uncle Sam is going to need the largest army in the history of our country to complete the "all out for victory" program which has been planned, and is now under way.

Elsewhere in this issue of the Illinois Medical Journal an enrollment form for Procurement and Assignment Service for Physicians will be found. It is hoped that those members of the medical profession who are within the prescribed age limits will respond freely so that conscription of physicians will be unnecessary.

Owing to the fact that approximately 5,000 men are graduated each year from our Class A medical schools, and 3,500 are needed to replace physicians who die each year, consideration is being given to a plan to make the medical courses continuous so that the full four years' course may be given in three years, of thirty-six months continuous study, especially "for the duration."

In addition to the need of many thousands of physicians for the armed forces, there are many other demands on the medical profession in time of war. Thousands will be needed to make examinations of selectees, for various Governmental Agencies which must be expanded rapidly, for Civilian Defense Services, for care of workers in essential industrial plants, and for the care of the civilian population itself. With approximately 180,000 physicians in the United States, there will be something which each one of this number can do to aid in the present emergency.

Recent experiences show the need for carefully organized Civilian Defense Services in every community, and emergency medical service must be included in all of these plans. Under the present setup, in each community there will be a Local Director of Civilian Defense, a Control Center, Chief of Emergency Medical Services with an Advisory Medical Council representing the Health Departments, Medical Society, Nursing, Red Cross, and other essential

personnel. Hospitals will be selected as field units, then there will be ambulance units and casualty stations. With the many industrial plants, training camps, and flying fields scattered throughout this country, it is essential that every community be well organized for any conceivable type of attack within the range of our imagination.

Modern warfare is unlike that of the past. With the long range bombers, dive bombers, tanks, flame throwers and many other appliances which can devastate life and property on a huge scale within a short period of time, no community in this entire country should be left unprotected and unprepared for any type of emergency which might arise.

Blood plasma and its value in shock is well known to all physicians and will be needed in large quantities. It is quite probable that many collection stations will be established throughout the country. Many physicians will be used in the collection of this important therapeutic agent which must be handled in the most perfect aseptic manner, and be sent to the designated processing stations. The American Red Cross will assume much responsibility in handling this valuable product.

The value of the Red Cross in time of war is well known to all. At this time a call has been sent out for at least fifty million dollars for the many types of services now under way. Each community has been given a definite quota and it is hoped that all of them will "go over the top." In the many drives for funds throughout the country, physicians can be of much service by volunteering to talk before many types of organizations on the work of the Red Cross and its ever expanding duties in modern warfare. The story of plasma and its value in saving life can be stressed in these campaigns as this invariably appeals to the average citizen who desires accurate information at the present time.

Many physicians will recall the "minute men" during the last World War and their efforts to promote the sale of Liberty Bonds. At this time our Government must spend more money than ever before and it is imperative that every American citizen become the owner of Defense Bonds and Defense Stamps to do his bit in the financing of the "all out for Victory" march.

Medical Economics, although a relatively young consideration in medicine, is ever changing. During the past decade we have seen many new factors added to the list of subjects which have been discussed in this column. Now that our country is at war, more consideration must be given than ever before to the role of medicine in our National Defense. This must be a major subject for discussion in our medical society meetings.

The Illinois Medical Journal will most likely develop a new department of Medical Preparedness where each month the reader can find quickly, various short articles on this subject as well as many press releases from various Governmental Agencies which are being received each week at the present time.

Medicine, like all other professions, organizations and industries, must be united more than ever before, and with the vast resources and facilities in this greatest of all nations, no one can doubt the ultimate victory which will be achieved if we remain united and everyone does his or her part.

Harold M. Camp, M.D.

HELP FINANCE THE ALL OUT FOR VICTORY MARCH BY PURCHASING UNITED STATES DEFENSE BONDS.

Tuberculosis is a vanishing disease. Perhaps we are a little hypnotized by that fact. When this century began we know that tuberculosis claimed more than 200 victims annually from every 100,000 of our population; today, four short decades later, tuberculosis has been driven from top billing down to a shaky seventh. But these facts do not tell all of the story. Tuberculosis is still the leading cause of death in those of college age. Tuberculosis is still as much of personal catastrophe for the individual who contracts it today as it ever was in the past. Tuberculosis has lost none of its ability to ruin a career, wreck family budgets, burden taxpayers, or bring suffering and disability to thousands of Americans, no one of whom deserves or needs to contract tuberculosis if every one utilized fully what medical science knows and has to offer. Charles E. Lyght, M.D.

The Friedmann Tuberculosis Remedy has been rejected after decades of careful investigation by experienced specialists in tuberculosis (Munchen. med. Wchnschr. 88:512 April 25, 1941). In the "Friedmann law suit" the worthlessness has been corroborated on the basis of detailed reports of qualified experts. The followers of Friedmann now use the old Friedmann remedy again under the new name of "utilin." The board of directors and the advisers of the German Tuberculosis Society unanimously reject the application of "utilin." Jour. Amer. Med. Assn., July 19, 1941.

Original Articles

SCARLET FEVER

ARCHIBALD L. HOYNE, M.D.,
CHICAGO

It seems scarcely necessary to state that scarlet fever and scarlatina are one and the same disease. Moreover, we are not justified in using the latter term to imply that an attack of scarlet fever is mild. These facts are not always thoroughly understood by parents.

History. In ancient times scarlet fever was undoubtedly confused with measles and erysipelas. For more than 50 years the streptococcus has been linked with the disease either as the causative agent or as a contributory factor responsible for complications. Since the Dicks' report of a specific streptococcus in 1923, a vast amount of additional investigative work has been carried on. Griffith of England has differentiated 28 types of streptococci capable of producing scarlet fever. The first four types are responsible for about 70 per cent of the scarlatinal infections in England.

From a practical standpoint we need assume merely that scarlet fever may result from a hemolytic streptococcus infection.

Port of Entry. As emphasized by the Dicks, there is a similarity between diphtheria and scarlet fever in respect to the manner in which infection occurs. In each instance, the port of entry is most frequently the respiratory passages. But while localization of the primary infection is most often in the throat or nasopharynx these are not the only sites where the organism may gain entry to the body. As early as 1864, James Padget called attention to surgical scarlet fever. After extensive burns, scarlet fever is not extremely rare. And it has often seemed to me that many of the cases of puerperal fever could be classified properly as surgical scarlet fever. When the infection occurs at some site other than the nose and throat the local symptoms in the latter are often mild.

Transmission. A relatively small proportion of scarlet fever patients acquire their infections from active cases. Books and inanimate objects, while capable of transmitting the disease, are a minor factor in its spread. In the present day a contaminated milk supply is only rarely the source of an epidemic. Nevertheless, this infection exhibits continual waves of prevalence from year to year without broad variations. The total number of cases reported annually in a community seems to be governed chiefly by the size of the population. The larger the community the greater is the number of scarlet fever carriers, and it is these vectors of scarlet fever which make it practically impossible to control the disease.

Age. Scarlet fever is unusual before the first year of life. Even though the mother is suffering from scarlet fever at the time of confinement, the infant usually escapes infection. We have had many instances of this kind at the Cook County Contagious Disease Hospital. Nevertheless, some French authors have reported scarlet fever infection in the unborn child.

In the first years of school age (6 to 10), the incidence of scarlet fever is at its height. However, the discase is by no means uncommon in older patients. Approximately 16 per cent of our hospital patients are adults, — that is, more than 16 years old. Frequently, we have patients in the second score and sometimes the third score year of life. Second attacks of clinical scarlet fever are not common but more than one attack without a rash is probably far more frequent than we realize.

Presented before the Post-Graduate Conference, Illinois State Medical Society, Alton, Illinois, December 4, 1940.
From Municipal Contagious Disease and Cook County Contagious Disease Hospitals.

Forms. All scarlet fever patients may be divided into two general groups. (1) mild and (2) severe. In the second group will be found (a) the septic and (b) the toxic types.

Symptoms. The incubative period usually varies from two to four days. Rarely it may be as long as ten days. Incubative periods of but 24 hours seldom occur. The onset is nearly always abrupt, and whether the disease is mild or severe, variation in the symptoms is usually only a matter of intensity. Sore throat, fever, nausea, or vomiting nearly always occur. As a rule, the rash, when present, appears from 12 to 36 hours later. Although it is customary to state that the eruption appears first on the neck and chest, the enanthen can often be observed on the palate and mucuous membranes of the throat before the rash is seen on the skin. We are all so thoroughly familiar with the scarlet fever eruption that it is hardly necessary to mention that the finely pin-point rash with the sub-cuticular flush is seldom seen on the face. The face is flushed, however, and with the characteristic circumoral palor, scarlet fever presents the typical picture that we read of in books. The pulse is rapid, respirations are increased, and the temperature may range from 101 to 104, or higher in the toxic types. At this time the mucous membranes are deeply injected, the tonsils are swollen and often suggest an acute follicular tonsillitis. A leucocytosis of from 10-18,000 is usually present, and the urine is likely to show a trace of albumin. The tongue is heavily coated and the papillae which are hypertrophied, contribute to the designation "strawberry tongue." In a majority of cases the average duration of the rash is from two to three days. By the second day of the rash it may be noted that the coating is clearing from the tongue at the tip and along the margins; and ordinarily, by the end of the third day since the rash made its appearance the tongue will be free of coating, presenting the clean red appearance of the "raspberry." This similarity is enhanced by the elevation of the papillae. As the rash fades the temperature declines, and by the end of a week in the mild forms of scarlet fever, the patient is practically well, if no complications ensue.

While desquamation in scarlet fever is anticipated, it does not always occur. When present, its early or late development is influenced by the intensity of the eruption. The milder the eruption the greater will be the number of elapsed days before desquamation is seen. Patients treated early with convalescent serum or scarlet fever antitoxin may show no evidence whatever of desquamation.

In the septic types of scarlet fever there may be almost from the onset a profuse nasal discharge. Cervical adenopathy may be marked; in some instances there is an extensive brawny induration of the neck. There is great intensity of the throat symptoms and swallowing may be difficult. Patches on the tonsils and throat, caused by the streptococcic infection may be suggestive of diphtheria. In the septic type of scarlet fever complications may develop early, rather than late. Yet, notwithstanding the unfavorable appearance of the patient, the prognosis is far better than in the strictly toxic type of the disease.

In toxic scarlet fever there is represented one of the most malignant forms. The temperature reaches unusual heights, often ranging from 104 to 106. The pulse is very rapid, respirations are accelerated, and the patient may be irrational. Death may occur before any rash is seen on the skin.

Diagnosis. Under various circumstances the diagnosis of scarlet fever may be extremely difficult. In those patients where no well definited eruption exists there is no sign so valuable as the "strawberry" or "raspberry" tongue. A nose and throat culture for hemolytic streptococci may be useful. And a white blood count will help to exclude certain conditions which are characterized by leukopaenia. If a rash is present, it will rarely be seen on the face, a locality where a measles eruption predominates. By means of the Schultz-Charlton test either convalescent serum or scarlet fever antitoxin should produce blanching at the point of injection, provided the patient is suffering from scarlet fever. A Dick test is not likely to be of great value from a diagnostic standpoint. In a differential diagnosis some of the following disease or conditions may require consideration: measles, German measles, diphtheria, roseola infantum, the prodromal rash of smallpox, streptococcic sore throat and various serum and drug eruptions. In many of these conditions the distribution of the eruption may be a helpful aid in reaching a conclusion. Perhaps the most difficult decision of all to make is that between a

streptococcic sore throat and a case of scarlet fever without an eruption. A somewhat similar problem is presented when an effort is made to choose a diagnosis between surgical scarlet fever and puerperal sepsis.

Complications. A generalized adenopathy is so common in scarlet fever that it may lead one to class cervical adenitis as the most frequent complication. Whether palpable glands in the neck shall be classed as a cervical adenitis is sometimes a matter of opinion, and a question of degree in regard to the glands' enlargement. Nevertheless, cervical adenitis is a very common complication. A far more important and much more serious occurrence is otitis media. Among 3,564 scarlet fever patients at Municipal Contagious Disease Hospital, Chicago, a purulent otitis media was present in 13.35 per cent. This figure closely approaches the average incidence of otitis media among many larger groups of patients reported by different investigators. Among our patients 45.16 per cent of those who had purulent otitis media developed mastoiditis. However, only 26.05 per cent of those who showed evidence of mastoiditis required surgical operation. Among scarlet fever patients in the group, which constituted 3,564 patients, mastoidectomy was performed on 3.47 per cent. In considering the complications of scarlet fever it must not be forgotten that from time to time the patient with otitis media may suffer not only from mastoiditis but may also develop a lateral sinus thrombosis. Nor is this all, because rarely meningitis, sub-dural abscess or even cerebellar abscess may follow. At times sinusitis is rather frequent in scarlet fever patients. Some years an ethmoditis is seen very frequently. Arthritis, which rarely suppurates, is not an unusual complication. Endocarditis, so commonly associated with scarlet fever, is seldom diagnosed during the acute attack, and other forms of heart involvement are infrequent in scarlet fever. Nephritis, which for many years was perhaps the most feared of all the complications, is now one of the fewest to be encountered. In our contagious disease hospitals in Chicago nephritis seldom exceeds one percent for the number of patients treated annually. One of the rarest of all complications is symmetrical gangrene. Perhaps one of the most interesting things in connection with the complications of scarlet fever is that they may follow an extremely mild attack as well as a severe one.

Mortality. During the past 30 years the death rate for scarlet fever has shown almost a continuous decline in the United States. A similar situation has existed in England. On the other hand, in Poland, Roumania, and southern Russia the case fatality rate is said to have been as much as 18 per cent. and even higher.

Since 1917 we have had approximately 37,000 scarlet fever patients treated at our Municipal Contagious Disease Hospital. During the first ten years the fatality rate for 7,987 patients was 1.5 per cent. and during the next ten years for 20,790 patients the rate was 2 per cent. Last year, 1939, our fatality rate was the lowest in the hospital's history, when it was 0.4 per cent for 2,356 patients treated. Our fatality rate at the Cook County Contagious Disease Hospital was but 0.1 of one per cent higher for a smaller number of patients.

Treatment, Prophylactic. It has long been my opinion that if tonsils and adenoids were removed before children entered school, there would be far less scarlet fever. Whether or not all susceptible children should be immunized with scarlet fever toxin according to the Dick method is a matter which must rest on the judgment of the family physician. However, it does seem advisable to perform a Dick test on every child before entering kindergarten or school and that a record be kept of the result. In the presence of scarlet fever exposure through close contact passive immunity may be accomplished by the administration of convalescent scarlet fever serum. Ten cc. given intramuscularly is usually sufficient to afford protection for from 10 days to 2 weeks at least, if injected within two days of exposure. If exposure is continuous or recurs within ten days, it is well to give a second injection and this can be done without fear of reaction when human serum is used.

Treatment, active. For the scarlet fever patient we continue to believe that human convalescent scarlet fever serum is of great value. It may be administered either intramuscularly or intravenously and the size of the dose will depend upon the severity of the infection. For an average case, from 20-40 cc. is often sufficient. Scarlet fever antitoxin, as now prepared, is equally effective, and unpleasant reactions are seldom seen with the improved serum that is now available. A dose of 9,000 units

which amounts to about 3½ cc. by volume is very effective for an average attack of scarlet fever. Our hospital experience has not indicated that sulfanilamide has any particular value in uncomplicated scarlet fever. We must admit, however, that sometimes it does seem to be distinctly beneficial in the therapy of ear conditions. And its value in streptococcic meningitis seems certain.

It is my belief that gargles are distinctly contraindicated in scarlet fever, although antiseptic mouth washes are not objectionable if properly used. Although a liquid diet may be required when there is an intense inflammatory condition of the throat, the choice of diet in scarlet fever, in so far as it exerts any influence on progress toward recovery, is a matter of small concern. As a rule, the scarlet fever patient does not require prolonged confinement to bed unless complications make it necessary.

If cold applications are applied early to a cervical adenitis, incision will rarely be needed. We do not believe in irrigating acute cases of suppurative otitis media. Such ears are dry wiped, although 50 per cent. alcohol has been shown to be very helpful. In the extremely toxic forms of scarlet fever blood transfusions are of great value. Under such circumstances it is preferable to secure a donor who has a negative Dick test or better still to perform an immuno-transfusion. In other words to use a convalescent scarlet fever patient as a donor, if the proper type of blood can be obtained.

It is difficult, if not impossible, for health authorities to avoid establishing some arbitrary method for the quarantine of scarlet fever. On the other hand, there is practically nothing to indicate that scarlet fever is controllable at the present time. While isolation of the patient is of urgent necessity, the quarantining of the entire premises seems to accomplish little. For the same reason that a scarlet fever carrier is more likely to infect a larger number of individuals than the scarlet fever patient who is acutely ill; likewise, the patient who has recovered from a mild attack of scarlet fever is more apt to infect others than the patient who has suffered from severe complications and for that reason is feared.

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ILEOCECAL GRANULOMAS

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Ileocecal granulomatous lesions may produce a picture similar to appendicitis, ulcerative colitis, bowel obstruction or malignancy. Even at operation an exact diagnosis may be impossible and often the true nature of the process remains unknown until microscopic examination is made. It is always timely to site the occurrence and some of the salient features of these confusing lesions. All granulomas are supposedly on an infectious basis, yet the exact etiological agent may be obscure or not understood. Two groups result therefore; specific and non-specific granulomas.

I. SPECIFIC ILEOCECAL GRANULOMAS

Of the specific ileocecal granulomas, hyperplastic ileocecal tuberculosis is the most common; those resulting from actinomycosis, amebiasis, Hodgkin's disease, and syphilis, are less frequent.

Hyperplastic Ileocecal Tuberculosis is a disease most frequent in young individuals. It usually is associated with a primary pulomonary process, though the lesion may be relatively inactive or inconspicuous. This process almost always is localized in the ileocecal region and is not to be confused with the diffuse ulcerative type which may follow advanced pulmonary tuberculosis.

The early symptoms and physical findings are often so slight or indefinite that diagnosis is not made until the lesion is far advanced. The discovery of a tumor in the right lower quadrant may be the only factor which brings the patient to the physician. Hyperplastic ileocecal tuberculosis, like many other organic lesions in this region, may cause only dyspeptic symptoms, occasional attacks of tenderness in the right lower quadrant, or some irregularity of bowel habit. Röentgenologic examination of hyperplastic tuberculosis does not always reveal characteristic or specific information. The early cases show spasticity and hypermotility; later, distortion, filling defect, stasis or stenosis may be exhibited. This is most frequently confused with regional enteritis, carcinoma and regional ulcerative colitis.

From the Surgical department of St. Luke's Hospital.
Presented before the Section on Surgery, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 21, 1941.

Roentgen examination of the chest may aid in the establishment of a diagnosis. The gross pathological specimen may be indistinguishable from regional enteritis or carcinoma.

The results of resection surgery are very satisfactory if the lesion is localized, and the patient's general condition favorable. The writer prefers a wide, one-stage resection with an ileotransverse colostomy in selected cases; and a two-stage procedure for the debilitated patient.

Case 1 — (Typical hyperplastic ileocecal tuberculosis). P. D., a white male, twenty seven years old, entered St. Luke's Hospital on December 27, 1939, complaining of attacks of cramp-like abdominal pain centering in the right lower quadrant, occasional nausea and vomiting, weakness, loss of weight, and night sweats. Alternating diarrhea and constipation with periods of mild distention had been present. On admission, a mass was palpable in the right lower quadrant. One year previously, the patient had noticed occasional attacks of mild intermittent abdominal pain which radiated to the right lower quadrant, and was accompanied by nausea. Six months later during one of these attacks, an appendectomy was done. The granulomatous appearance of the cecum and the terminal ileum was noted. The symptoms increased in severity and a tender mass became palpable in the right lower quadrant. No blood was noted grossly in the stool. Roentgenologic examination, using a small portion of barium in petrolagar, revealed a filling defect, stenosis and distortion of the terminal ileum and cecum. A small area of active tuberculosis in the left upper lobe of the lung, which had not been discernible by physical examination, was revealed by x-ray. At operation the granulomatous mass, composed of matted thickened and distorted terminal ileum and cecum, together with the corresponding enlarged mesenteric lymph nodes, was resected widely by a one-stage procedure; establishing an ileotranverse colostomy. Microscopic examination of the specimen confirmed the diagnosis.

Short circuiting operations in many instances have been successful but often the symptoms are not alleviated and sometimes the lesion progresses, producing an inoperable condition.

Case 2 — (Extension following a short circuiting operation). M. G., a twenty three year old white female, suffering from hyperplastic ileocecal tuberculosis, had an ileotransverse colostomy performed in 1936, without resection of the lesion. Roentgenologic examination revealed a small pulmonary lesion in the right upper lung. The symptoms were alleviated somewhat but after six months they increased in severity. At the end of eighteen months, attacks of cramp-like abdominal pain, nausea, vomiting, alternating diarrhea and constipation, mild abdominal distention, and a large palpable mass in the right lower quadrant necessitated a second operation with resection contemplated. The process, however, in the interval had extended to include the anastamosis and regional lymph nodes, making resection impossible. An ileosigmoidostomy was established to relieve the obstruction but the patient became progressively worse and succumbed at the end of six months.

Amebic Granulomatous Lesions of the intestine occasionally occur as the result of amebiasis, and are most frequent in the cecum and sigmoid. Ochsner and DeBakey[8] refer to these lesions as "amebomas." Round cell infiltration, lymphoid hyperplasia, and many eosinophils are prominent. When chronic lesions occur in the ileocecal region or elsewhere in the intestinal tract, meticulous search for amebas should always be made. Amebiasis may be the primary disease or a complicating factor to some other lesion. Fatalities are frequently the result of surgery in the presence of amebas. It should be remembered that diarrhea is not necessarily a symptom.

In the treatment of amebic granulomas, specific therapy may be sufficient, but occasionally resection or short circuiting operations may be indicated to alleviate the symptoms caused by cicatrical stenosis. These granulomatous lesions may be overlooked until attention is called to such complications as liver or subphrenic abscess.

Actinomycotic Granuloma. In 1931, Good[4] reported sixty-two cases of abdominal actinomycosis in which the site of the lesion was present in the ileocecal region in forty-eight patients (77.5%). This lesion is characterized by abscesses, sinuses, granulomatous tissue and a brawny infiltration of surrounding tissues. A diagnosis is not usually made until sinuses appear, or until an abscess is drained, with examination of the drainage material, disclosing characteristic sulphur granules. The early symptoms are confused, as a rule, with those of appendicitis. Later, a palpable mass, usually fixed to the abdominal wall, occurs in the right lower quadrant. Deep abscesses and areas of central necrosis are common. Early diagnosis is important if any satisfactory result from treatment is to be expected. The initial lesion is often overlooked until the symptoms of generalized actinomycosis or metastic lesions become evident.

The treatment consists of: (1) radical resection, if possible, (2) establishment of free drainage, (3) massive doses of potassium or sodium iodide, (4) sulfanilamide, (5) thymol, (6) Roentgen ray and radium, and (7) general supportive measures.

The prognosis of abdominal actinomycosis is always grave. In Good's[4] follow-up on forty-two patients, twenty-nine had died.

Case 4 — W. L. F., a fifty six year old male, while convalescing from an operation for an incarcerated left inguinal hernia in 1935, developed characteristic symptoms of appendicitis. At operation, the ileocecal region presented a granulomatous mass in which lay an abscess. This was drained and a fistula resulted which subsequently healed. The patient was not seen until four months later, when he entered the hospital with nausea, vomiting, alternating constipation and diarrhea, temperature of 100 degrees, and a left sacro-iliac and perirectal abscess. Despite drainage of the abscesses the patient's condition became rapidly worse and he died a few days later. Autopsy revealed generalized actinomycosis, involving the left ililum and ischium, the spine, left psoas muscle, the sigmoid, rectum, perirectal tissues, peritoneal cavity, lungs, frontal lobe of the brain and calvarium.

Syphilitic Granulomas of the intestinal tract are extremely rare. A routine Wasserman test on all patients is rapidly becoming a practice. Any patient having a positive Wasserman and symptoms referable to a chronic intestinal lesion should at least be suspected of having a luetic granuloma.

Hodgkin's Disease of the intestinal tract is also rare. Previous to 1930, only twenty cases had been reported and of these nearly half were diagnosed at autopsy.[9] Isolated or regional involvement is most frequent in the upper small bowel. The lesions are multiple, although single ones have been reported. Mesenteric lymph node involvement is common.

This granulomatous disease very strikingly simulates lymphosarcoma. The diagnosis is usually made by tissue examination which reveals characteristic Dorothy Reed cells. Spangler[9] recently reported a case in which an intestinal obstruction was caused by an isolated tumor which microscopically proved to be a Hodgkin's granuloma.

Anthrax and Blastomycotic Granulomas, like Hodgkin's disease, in the ileocecal region, are so exceedingly rare and the symptoms so indefinite that diagnosis usually is never made except by tissue examination after operation or at autopsy.

II. NON-SPECIFIC GRANULOMAS OF THE ILEOCECAL REGION

Valuable contributions to the understanding of non-specific granulomatous intestinal lesions have been made by Treitze,[10] Moschcowitz and Wilensky,[6,7] Mock[5] and many others. In 1933, Ginsberg and Oppenheimer reported an excellent "working classification" of fifty-two cases.[3] The early symptoms of non-specific ileocecal granulomas may be so indefinite as to be overlooked, or they may resemble an acute inflammatory process, most frequently diagnosed appendicitis. The chronic lesions are usually manifested by a palpable mass in the right lower quadrant, associated with symptoms of bowel stenosis or ulceration; clinically and radiologically confused with malignancy or tuberculosis. At operation it may be impossible to definitely establish a diagnosis. Histological examination shows only varying degrees of acute and chronic non-specific inflammation with infiltration by lymphocytes, poly-morphonuclear leucocytes, and plasma cells, along with fibro-plastic proliferation and occasionally degenerative changes. Giant cells due to foreign body reaction or inclusion are often present.

It is known that the intestinal wall and particularly its mucosa possess remarkable ability to cope with infection and inflammatory processes. As a result of this regenerative ability, extensive injury, ulceration, inflammatory exudates and masses may leave little or no gross evidence. However, following injury, infection, or a combination of both, this restitution may not occur, if infection or other irritating factors persist, or if the tissues do not have the ability to overcome them. Reparative and destructive processes occur which may lead to hypertrophic peri-intestinal masses, extensive intramural hypertrophic ulcerative and stenosing lesions, or a combination of both. Ginsberg and Oppenheimer[3] have suggested these factors as an explanation of intestinal granulomas.

1. GRANULOMAS SECONDARY TO FOREIGN BODIES

a. Extra-mural or intramural bowel perforating foreign body granuloma.

An intra-abdominal abscess is the usual result of intestinal perforation by a fishbone, pin or other foreign body from within or without, but occasionally only a marked hypertrophic inflammatory reaction takes place which clinically, and at operation, simulates a neoplasm. In some cases the reaction is mainly extramural, the slowly perforating lesion in the bowel having been sealed off by parietal, visceral, or omental adhesions with very little or no pus formation;

producing an inflammatory mass. Some of these perforations are walled off by the anterior abdominal wall with few or no intestinal changes or symptoms, creating the impression of an abdominal wall tumor.

Case 5 — J. S., a forty-five year old colored male entered St. Luke's Hospital complaining of pain in the right lower quadrant of a week duration. Examination revealed a large tender mass in the right lower abdominal quadrant, temperature 100 degrees, and a 21,000 leucocyte count. On a diagnosis of an appendiceal abscess, a McArthur muscle splitting incision was made. The handle of an old fashioned soup spoon was found protruding from the cecum, through the parietal peritoneum, into the internal oblique muscle. This foreign body lay buried in a large granulomatous mass and along side of the mass lay an acutely ulcerated appendix. Appendectomy was performed, the spoon handle was removed and the cecal opening closed. The patient made an uneventful convalescence and the mass completely disappeared. X-ray examination with barium, later, revealed no residual abnormality of the ileocecal region.

Case 6 — M. K., entered the hospital with progressive distress in the ileocecal region. One year previously a gastroenterostomy had been performed for an obstructive duodenal ulcer. Examination revealed a tender palpable mass in the right lower quadrant. X-ray examination showed the presence of an open forcep at the junction of the ileum and cecum. At operation a badly disentegrated pair of Kocher forceps, lay partially within the lumen of the bowel, at the ileocecal junction, and partially buried in a large granulomatous mass which appeared to be mostly extra-mural. X-ray examination revealed no sign of abnormality at the site several months after removal of the forceps.

b. Extra-mural non-perforating foreign body granulomas result occasionally from a sponge left in the abdomen at operation or from appendiceal or omental ligatures.

2. GRANULOMAS SECONDARY TO VASCULAR DISTURBANCES OF THE BOWEL

Occasionally granulomatous lesions producing symptoms of stenosis have been known to result when viable bowel with a compromised blood supply has been replaced at operation for a strangulated hernia. The blood supply is just adequate to prevent necrosis but not sufficient for complete viability of the mucosa. Ulceration of the mucosa and low grade secondary infection, gradually produce a granulomatous lesion with a tendency toward stenosis. The lesion is usually surrounded by visceral and omental granulomatous adhesions. The ulcerative phase usually is not noticed. The symptoms are most commonly those of a gradual increasing partial intestinal obstruction. This same picture is sometimes produced by abdominal contusions without actual perforation of the bowel, by small mesenteric tears, or by partial adhesive strangulation. The picture is like that occasionally produced when a primary infectious process has caused secondary thrombotic and degenerative changes.

3. LOCALIZED HYPERTROPHIC COLITIS

It is known that nearly twenty-five per cent of the cases of diffuse ulcerative colitis are accompanied by back-wash into the terminal ileum but it is very unusual for this extension to be accompanied by hyperplasia or granulomatous reaction in the terminal ileum. Hyperplastic and granulomatous lesions of the cecum and ascending colon may complicate ulcerative colitis. An exact diagnosis is frequently made when a palpable mass in the right lower quadrant is accompanied by a typical history and characteristic proctoscopic and x-ray findings of diffuse ulcerative colitis; but when confronted with right sided colitis the diagnosis is more often obscure. Stenosis and polypoid changes may be indications for resection of these lesions.

4. GRANULOMAS PRODUCED BY SIMPLE PENETRATING, ISOLATED OR SOLITARY ULCERS OF THE COLON OR TERMINAL ILEUM

Instances of isolated or solitary ulcers of the terminal ileum and cecum have been reported and occasionally one of these ulcers slowly perforates with the formation of a firm hyperplastic inflammatory mass, composed of bowel, omentum and enlarged mesenteric lymph nodes. The same difficulty in diagnosis exists as in other granulomatous tumors. This lesion is frequently operated on for appendicitis, and often resected with a diagnosis of a penetrating or perforating malignancy.

Examination of the specimen reveals one or more "punched-out" penetrating or perforating lesions which resembles peptic ulcers. The surrounding bowel does not appear to be grossly changed. Occasionally severe hemorrhages have been known to occur. The etiology is unknown. They are usually not diagnosed and are of no surgical interest unless hemorrhage, stenosis, or a tumor occurs.

5. GRANULOMAS SECONDARY TO LESIONS OF THE BOWEL OR ITS APPENDAGES IN THE ILEOCECAL REGION

a. *Hyperplastic Appendicitis.* The relationship of the appendix to the development of hyperplastic lesions in this area is well recognized. The best example of this type of granuloma is that presented by hyperplastic appendicitis. As a result of unresolved or chronic inflammation the appendix is found buried in a palpable mass of granulomatous, fibrotic tissue. The serosa, subserosa and adjacent tissues are mainly involved and the mucosa is usually intact. The serosa and subserosa of the cecum and terminal ileum is frequently involved by contiguity. As a rule the only change in the bowel lumen is distortion from extramural pressure or displacement. Resection has occasionally been done for this condition but is usually unnecessary after removal of the appendix.

Case 7 — E. K., a white male forty-five years old, entered the hospital complaining of pain and swelling in the right lower quadrant of five days duration. Two weeks previously he had noticed generalized abdominal cramps but no other symptoms. Examination revealed a large, slightly tender, firm tumor in the right lower quadrant, temperature 99 degrees, and a 15,000 leucocyte count. X-ray study revealed the ileocecal junction pushed to the left by an extra-mural tumor lateral and below the capit coli. The ileocecal region was fixed but there was no delay in the progress of the barium. At operation a retrocecal retroperitoneal appendix was found buried in a large granulomatous mass. The mucosa of the appendix was intact but there was a marked thickening and fibrosis of its wall. Three months after appendectomy the tumor mass had completely disappeared and x-ray examination revealed that the ileocecal junction had returned to it's normal position.

b. *Meckel's Diverticulitis.* A similar granulomatous process occasionally occurs about a Meckel's diverticulitis. The nature of the process is the same as that which may be produced by diverticulitis of the sigmoid. Cases have been reported in which a perforating ulcer occurred in a Meckel's diverticulum, the mucosa of which had acid secreting ability.

c. *Typhilitis* is a term now seldom used. Doubtless in the past, numerous cases of specific and non-specific granulomatous lesions were generally classified as typhilitis. It is recognized however that such a lesion does occur. Both the cecum and the appendix, and occasionally the ileocecal junction are involved in marked submucous thickening, edema and fibrosis which rarely involves the ascending colon. The appendix lies free and does not seem to be involved any more than the cecum. Little peritoneal ulceration or fibrinous deposit occurs but the ileocecal glands and the retroperitoneal tissues may be involved. Occasionally an ulcer is found in the appendix or cecum but the reaction is out of proportion to the mucosal lesion. The origin of this process is unknown. Microscopic examination reveals only non-specific inflammatory hyperplasia. It is easy to understand why repeated or continuous attacks could produce a palpable ileocecal mass. The symptoms are usually those of recurrent subacute appendicitis and the presence of a tender palpable mass simulates the complications of appendiceal disease. At operation the differential diagnosis from tuberculosis may be impossible and the lesion is occasionally resected in this belief. Many of these cases recover without surgical procedure.

6. REGIONAL ENTERITIS

Of the non-specific granulomas of the ileocecal region, regional enteritis is probably the most commonly recognized although its etiology is unknown. It was the original concept of Crohn[1] that this granulomatous process was localized to the ileocecal segment. This regional manifestation remains the most frequent location of occurrence, although it has been observed that any portion of the intestinal tract may be involved, with a tendency toward skip or extension areas.

Pathologically this entity has a tendency to be a progressive granulomatous, inflammatory process involving all the coats of the intestine, beginning with small ulcerations of the mucosa at the mesenteric side of the bowel. Later, the inflammatory reaction is replaced by fibrostenosis. Induration and hyperplastic glands occur in the mesentery and abscesses frequently result from a slowly perforating ulceration. These abscesses have a tendency to cause external or internal fistulae. Histological examination reveals only various degrees of non-specific acute, subacute, and chronic inflammation. Occasionally foreign body reaction or inclusion giant cells are found.

It is recognized that there are four clinical phases of this disease denoting progression; namely, the acute, ulcerative, stenotic and fistulous phase. The different phases may not be in sequence or clearly defined.

The Acute Phase is characterized by symptoms simulating appendicitis. Diarrhea is not a reliable diagnostic symptom. At operation the involved bowel is soggy, blotchy, and edematous. Many times the serosa is roughened and covered with a fibrinous exudate. The corresponding mesentery contains numerous enlarged glands. X-ray study reveals only hypermotility and spasm.

The Ulcerative Phase presents symptoms similar to ulcerative colitis although as a rule the colon symptoms are not so prominent. Colic-like abdominal pains, diarrhea, anemia, fever, and loss of weight may be present. This phase is often so transient that it is not noticed and the disease not recognized until the chronic phases are evident.

The Stenotic Phase is one of the most commonly recognized phases and presents symptoms of a chronic or a partial small bowel obstruction. A mass is usually palpable in the right lower quadrant, composed of loops of granulomatous, soggy, distorted or stenosed bowel, hyperplastic mesentery, and mesenteric glands. Abscesses, and internal or external fistulae may be complicating factors. The presence of serosal tubercles serve to confuse the diagnosis in favor of tuberculosis.

In the chronic phases, distortion, filling defect, altered mucosal pattern, string sign, tapered proximal ileum or stasis may be revealed Roentgenologically. Occasionally internal fistulae are visualized. The cecum may exhibit spasm but if involved in the granulomatous process or by adhesions and fistulae, it may present a constant deformity.

The Fistulous Phase is a common complication of the stenotic phase. External irretractable fistulae may result from the drainage of a supposedly appendiceal or pelvic abscess and frequently they are present at the site of a previous operative scar. Internal fistulae may connect the involved portion of bowel with other loops of ileum, the cecum, sigmoid, bladder or vagina.

Crohn[2] has called attention to the incidence of perirectal abscesses or fistulae complicating regional enteritis. I have noted this manifestation only once in the study of twenty-eight acute and chronic cases.

Treatment. The treatment of the acute and subacute phases of regional enteritis is non-specific although exploratory operation is often justified. The treatment of the chronic forms is a surgical problem. The ideal surgical procedure, in selected cases, is a one-stage wide resection of the involved ileum including the cecum and most of the ascending colon, with the establishment of a transverse ileocolostomy. For the patient in poor condition or with complicating factors, a multiple stage operation is preferable. It is important to resect widely and not to overlook skip areas. At the first operation of a multiple stage procedure it is essential that the ileum is transected just distal to the ileocolostomy as a means of preventing extension in the interval between operations. Short circuiting operations often have been successful but the incidence of extension is against its general adoption. The results of resection are satisfactory and the mortality averages between ten and fifteen per cent.

SUMMARY

The clinical, laboratory, operative, and gross pathological data of ileocecal granulomatous lesions often fail to differentiate them from one another or from appendicitis, and malignancy.

Some of the salient features of the specific and non-specific granulomas are reviewed and illustrated.

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TUMORS OCCURRING IN THE REGION OF THE PULMONARY APEX

Further Observations with Report of Twelve Additional Cases*

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HINES

It is interesting to note that in 1838 Hare probably reported the first so-called superior pulmonary sulcus tumor (but not by any specific name). The first contribution to the literature on the subject of primary carcinoma of the lungs and bronchi was made by Boyle in 1810.

The greatest impetus to the study of apical lung tumors followed a report of cases by Pancoast in 1924 and 1932. He believed that a distinct new pathological entity had been created, and he termed the tumors situated in the pulmonary apex and thoracic inlet superior pulmonary sulcus tumors. This term was used by him "because this term implies its approximate location and a lack of origin from the lung, pleura, ribs or mediastinum." He stated that primary lung cancer could practically be ruled out. He suggested an embryonal rest as an etiologic factor.

Pancoast specified certain characteristic symptoms and manifestations necessary for the diagnosis of tumors in the pulmonary apex. These are as follows: pain around the shoulder and down the inner side of the forearm, Horner's syndrome and evidence of wasting of the muscles of the hand with subsequent loss of strength. The roentgenographic appearance showed a small circumscribed shadow in the apex of the lung due to lung displacement, destruction of the posterior portions of one or more ribs and also possible involvement of the posterior parts of the transverse processes or sides of the bodies of the vertebrae. Intrathoracic metastasis was not present.

A summary of fifteen cases with additional information reported previously by this author will be reviewed as well as reporting twelve new cases of so-called superior pulmonary sulcus tumors.

*From the Veterans Administration Facility, Hines, Illinois. Published with the permission of the Medical Director who assumes no responsibility for the opinions expressed by the author.

Read before the Section of Radiology, 101st Annual Meeting, Illinois State Medical Society, Chicago, Illinois, May 20, 1941.

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NEW CASES

Case 1. — *History* — A white male, aged 51, a steel inspector, was admitted to the hospital June 17, 1938 with the history that his health had been good until March, 1937 at which time he fell and injured the right side of his back. Five weeks later a fracture of the right clavicle was diagnosed and treated. He had persistent pain in the right shoulder and chest since that time. The pain was very severe and radiated into the right arm. He had lost weight and strength.

Physical examination — Revealed a white male who appeared chronically ill, fairly well developed, but poorly nourished. Horner's syndrome was present on the affected side. A small lymph node was palpable in the right supraclavicular region. Dulness to percussion noted in the right apex, also limitation of breath sounds. There was weakness and atrophy of the muscles of the right upper extremity.

Laboratory examination: — Urinalysis showed albumen 2 plus, occasional red blood cells, moderate number of white cells, and a few casts. Wassermann and Kahn negative. Hemoglobin content was 85 per cent. The red blood cells numbered 5,110,000 and the white blood cells 7,200. No tubercle bacilli found in the sputum.

Roentgen examination: — Revealed a homogeneous shadow of increased density occupying the right apex. The borders were well defined. Several metastatic spherules were seen in the left and right lungs. No evidence of metastasis noted on examination of the thoracic and lumbar vertebrae and pelvis. Old healed fracture seen in the right clavicle. Gastro-intestinal series revealed a duodenal ulcer. Intravenous pyelograms were negative.

Clinical diagnosis: — Bronchiogenic carcinoma, right upper lobe (Pancoast) with metastases to right and left lungs.

Clinical course: — Patient received palliative irradiation therapy without any effect. He gradually became worse and expired February 8, 1939.

Autopsy: — This revealed an adenocarcinoma of the right apex with metastases to the right and left lungs, left adrenal and to the peribronchial and peritracheal lymph nodes.

Case 2. — *History:* — A white male, aged 42, barber, was admitted to the hospital June 28, 1938 stating that in April, 1938 he first noticed pain in the right chest. The pains were increasing in severity and radiated down the inner aspect of the right arm to the wrist. Marked weakness of the right upper extremity with loss of weight also mentioned. No cough or hemoptysis.

Physical examination: — Revealed a poorly nourished white male who appeared chronically ill. A definite Horner's syndrome was present on the right side. The lymph nodes in the right axilla were enlarged and also dulness to percussion in the right apex was present.

Laboratory examination: — Urinalysis was essentially negative. Wassermann and Kahn negative.

Hemoglobin content was 85 per cent. The red blood cells numbered 4,350,000, and the white blood cells 21,100. Sputum examinations for tubercle bacilli were negative.

Roentgen examination: — Revealed and opaque shadow in the right apical region and also destructive changes in the third and fourth right posterior ribs.

Clinical diagnosis: — Carcinoma, bronchiogenic, right apex (Pancoast type).

Clinical course: — The patient received palliative irradiation therapy with no improvement. He died August 6, 1938.

Autopsy: — Revealed adenocarcinoma of the right apex of the lung with metastases to regional lymph nodes and erosion of the third and fourth posterior right ribs.

Physical examination: — Revealed a well developed but poorly nourished white male who appeared acutely ill. Horner's syndrome not present on admission but developed before patient's death. A large mass was palpable in the right posterior superior chest region. There was atrophy of the muscles of the right shoulder and of the interosseous muscles of the right hand; marked weakness of the right upper extremity also noted. Dulness to percussion and diminished breath sounds present in the right apex.

Laboratory examination: — Urinalysis was essentially negative. Wassermann and Kahn were negative. Hemoglobin content was 85 per cent. Red blood cells numbered 4,000,000 and the white blood cells 14,400. Biopsy removed from the apical tumor revealed adenocarcinoma of the lung.

SUMMARY OF EIGHT CASES OF APICAL CARCINOMA OF THE LUNG

Case	Age	Sex	Diagnosis Prior to Admission	Chief Complaint	Wasting or Weakness of muscle of hand or arm	Rib or Bone Changes	Horner's Syndrome	Lung Involved	Treatment	Result	Biopsy	Autopsy	Duration of Symptoms, Deceased Patients
1	37	M	Tuberculosis	Pain	Yes	Yes	Yes	Right	Surgery	Died	Squamous cell	Yes	6 months
2	45	M	Tuberculosis	Pain	Yes	Yes	Yes	Right	Irradiation	Died	No	Adenocarcinoma	18 months
3	43	M	Tumor	Pain	Yes	Yes	Yes	Right	Irradiation	Died	Squamous cell	No	15 months
4	54	M	Tumor	Pain	Yes	Yes	No	Right	Irradiation	Died	Squamous cell	No	32 months
5	43	M	Tuberculosis	Pain	Yes	Yes	Yes	Right	Irradiation	Died	No	No	15 months
6	48	M	Psychoneurosis	Pain	Yes	Yes	Yes	Left	Irradiation and chorotomy	Died	No	No	18 months
7	40	M	Neuritis	Pain	Yes	Yes	Yes	Right	Irradiation	Died	Squamous cell	Yes	19 months
8	41	M	Neuritis	Pain	Yes	Yes	Yes	Left	Irradiation	Died	Adenocarcinoma	No	11 months

Summary of cases previously reported[4]

Case 3 — *History:* — A white male, aged 44, grain broker, was admitted to the hospital September 7, 1938 complaining of pain in the right chest. He had had sharp pains in the right chest at irregular intervals for the past eight to ten years. During the past five years he has coughed up blood streaked sputa on about ten occasions. He also had dyspnea for the past five years. He attributed the pain and dyspnea to pleurisy and asthma. In February, 1937 he went to a private hospital where a roentgenogram of the chest was reported as normal. In April, 1938 he had severe shoulder pain which radiated down the right arm, inner aspect, to the elbow and later to the fourth and fifth fingers. Loss of weight twenty-five pounds. Had marked weakness of the right upper extremity during past few months. His private physician considered the onset of his present condition to be April, 1938. Roentgen rays of the chest showed lesions in the right hilum and right apex. He received palliative irradiation prior to his admission.

Roentgen examination: — Showed a shadow of increased density located near the right hilus, also shadow of increased density in the right apex. This shadow also extended into the right neck region. Destruction of the second and third right posterior ribs and the adjacent portions of the vertebrae was also noted.

Clinical diagnosis: — Carcinoma, bronchiogenic, right apex with metastasis to the right lung.

Clinical course: — Patient received palliative irradiation therapy with practically no improvement or relief of symptoms. He slowly became worse and died February 8, 1939.

Autopsy: — Revealed an adenocarcinoma of the apex of the right lung and destruction of the second and third right posterior ribs and adjacent vertebrae. Metastases to the peribronchial and peritracheal lymph nodes and to both kidneys and the left lung were also noted.

Case 4 — *History:* — A white male, aged 62, mail clerk, readmitted to the hospital October 7, 1938. He stated that on October 2, 1937 he fell and fractured the neck of the left femur. Prior to that time he had been in good health. He was admitted to the hospital on October 4, 1937, and his left leg placed in a plaster cast after a Smith-Peterson nail had been inserted in the left femur. He was discharged on January 19, 1938. At that time he had some pain in the left shoulder region which he attributed to the fact that he was lying on his back most of the time while in the cast. In November, 1937 he coughed up some bright red blood on several occasions. He had no fever and his appetite was good. He lost forty pounds in weight since October, 1937. In July or September, 1938 he first noticed aptosis of the left upper eyelid; also the pain in the left shoulder became worse and radiated down the left arm into the ring and index fingers of the left hand. He was readmitted because of the pain in the left shoulder and arm and weakness of the left upper extremity.

Clinical course: — Patient received palliative irradiation therapy with no relief of pain. He slowly became worse. He left the hospital November 8, 1938 at his own request. He died outside the hospital September 30, 1939. No autopsy performed.

Case 5 — *History* — A white male, aged 50, insurance agent, admitted to the hospital October 31, 1938. He had been in good health until May, 1938 at which time he developed a pain in his right chest and persistent cough. He expectorated mucus only. Had had night sweats for the past month. No weight loss but there was dyspnea and weakness on slight exertion. One month before admission he noticed a swelling in the right neck just above the clavicle and a ptosis of the right upper lid.

Physical examination — Revealed a fairly well developed and nourished white male appearing chronically ill. Enlarged cervical lymph nodes present in right neck and axillary region. Typical Horner's syndrome was present. Marked weakness of the right upper extremity and dulness to percussion in the right apical region was noted.

SUMMARY OF SEVEN CASES OF APICAL CARCINOMA OF THE LUNG

Case	Age	Sex	Diagnosis Prior to Admission	Chief Complaint	Wasting or Weakness of muscle of hand or arm	Rib or Bone Changes	Horner's Syndrome	Lung Involved	Treatment	Result	Biopsy	Autopsy	Duration of Symptoms, Deceased Patients
1	45	M	Tumor	Pain	Yes	Yes	Yes	Right	Surgery and Irradiation	Died	Squamous cell	No	6 months
2	50	M	Tumor	Pain	Yes	Yes	Yes	Right	Irradiation	Died	Adenocarcinoma	Yes	9 months
3	40	M	Osteogenic sarcoma	Pain	Yes	No	No	Right	Irradiation	Died	Osteogenic sarcoma	No	22 months
4	37	M	None	Pain	Yes	Yes	Yes	Left	Symptomatic	Died	No	No	4 months
5	40	M	Tuberculosis	Pain	Yes	No	Yes	Left	Symptomatic	Died	No	Undifferentiated carcinoma	4 months
6	39	M	Neuritis	Pain	Yes	No	Yes	Left	Symptomatic	Died	Adenocarcinoma	Yes	10 months
7	39	M	Neuritis	Pain	Yes	Yes	Yes	Right	Irradiation	Died	Squamous cell	No	16 months

Summary of cases previously reported with additional observations[8]

Physical examination: — Revealed a white male, fairly well developed and nourished, ambulant, and chronically ill. Definite Horner's syndrome, namely, absence of sweating of the left side of the face: ptosis of the left upper eyelid; enophthalmos; and miosis of the left pupil. Weakness and atrophy of the muscles of the left upper extremity noted. Slight dulness to percussion in left apical region. No lymph node enlargement.

Laboratory examination: — Urinalysis was essentially negative. Wassermann and Kahn negative. Hemoglobin content of blood 80 per cent. Red blood cells numbered 4,100,000, and the white blood cells 8,200.

Roentgen examination: — Revealed a heavy shadow of increased density in the left apical region. Old healed fracture of the left femur.

Clinical diagnosis: — Carcinoma, bronchiogenic, left upper lobe (Pancoast).

Laboratory examination: — Urinalysis essentially negative except for trace of albumin and a few white cells. Hemoglobin content of blood 80 per cent. Red blood cells numbered 4,200,000, and the white blood cells 11,000. Wassermann and Kahn negative.

Roentgen examination — Revealed a homogeneous shadow of increased density in the right apical region. Borders of the lesion smooth and rounded.

Clinical diagnosis — Carcinoma, bronchiogenic, right pulmonary apex (Pancoast) with metastasis to right cervical and axillary nodes.

Clinical course — Biopsy specimen from the right axilla revealed an adenocarcinoma, papillary, metastatic to lymph node. Bronchoscopic examination did not reveal any masses or growths in the accessible bronchi. Bloody fluid was aspirated on one occasion from the right pleural cavity. No tumor cells found in the fluid. The patient became progressively worse

and died December 7, 1939. He received symptomatic care only.

Autopsy — This revealed adenocarcinoma of the terminal bronchioles of the right pulmonary apex with metastases to pleura, cervical, axillary, mediastinal and abdominal lymph nodes.

Case 6 — *History* — A white male, aged 49, gardener, admitted to the hospital November 3, 1938 as a transfer from another hospital for treatment of tumor, left upper chest. He had first noticed pain in the left shoulder region May, 1938. He first consulted a physician in June, 1938 and no definite diagnosis was made. In September, 1938 the pain began to radiate down the left arm into the ring and little fingers of the left hand. The pain was aching in character. Loss of weight thirty pounds since May, 1938. In October, 1938 he first noticed weaknes of the left upper extremity, and in September, 1938 ptosis of the left upper eyelid. He had no cough or hemoptysis.

second and third left ribs and the adjacent portions of the vertebrae.

Clinical diagnosis — Carcinoma, bronchiogenic, left pulmonary apex (Pancoast type).

Clinical course — A biopsy of a lymph node in the left supraclavicular region done elsewhere revealed a diagnosis of metastatic analplastic carcinoma. Because of severe pain, the left lower cervical and upper dorsal sympathetics were injected with alcohol with some relief of pain. He received irradiation therapy with no appreciable relief of pain. He was discharged at his own request January 17, 1939 as a terminal case. Follow-up letter revealed that he died February 22, 1939. No autopsy was performed.

Case 7 — *History* — A colored male, aged 51, laborer, admitted to the hospital February 11, 1939 stating that he had noticed two small swellings in the right cervical region during January, 1937. About July, 1938 the swellings increased in size and became painful. He was diagnosed in a private hospital as

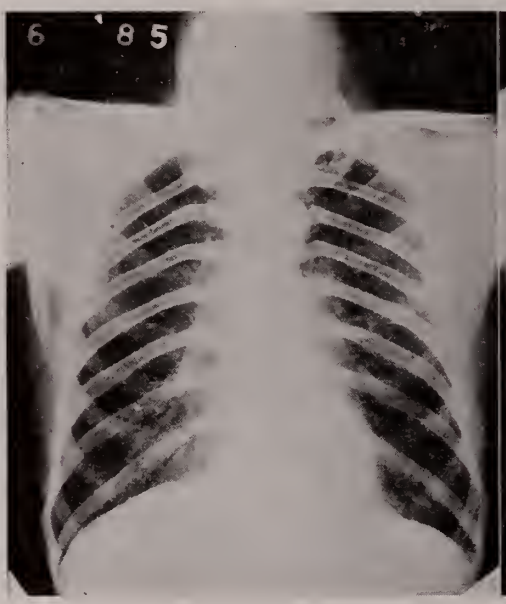


Figure 1. Shows typical appearance of a small apical lung tumor in the right apex. A tumor of this size may be easily over looked.



Figure 2. Shows typical appearance of an apical tumor in the right apex.

Physical examination — Revealed a white male, fairly well nourished and developed, who appeared chronically ill. Horner's syndrome was present on the left side. No palpable lymphadenopathy. Atrophy of the muscles of the left upper extremity and dulness to percussion in the left apical region was noted.

Laboratory examination — Urinalysis negative, except for few white cells and epithelial cells. Wassermann and Kahn negative. Hemoglobin content of blood 90 per cent. Red blood cells numbered 5,000,000 and the white blood cells 53,600.

Roentgen examination — Revealed a shadow of increased density with well defined borders in the left apex and destruction of the posterior parts of the

having had a carcinoma of the thyroid, but the diagnosis was not confirmed by biopsy. The patient left that hospital before diagnosis was completed. He did not have a cough or hemoptysis. Loss of weight thirty pounds. He supported his right arm with the left because of weakness of the right upper extremity.

Physical examination — Revealed a poorly nourished but well developed negro male who appeared chronically ill. A large mass approximately 4 x 5 cms. was palpable in the right supraclavicular region. A small amount of drainage was present from an ulcerated area. Horner's syndrome was noted on the right side. Atrophy and weakness of the muscles of the right upper extremity was present.

Laboratory examination — Urinalysis was essentially negative. Wassermann and Kahn were negative. The hemoglobin content was 80 per cent. Red blood cells numbered 4,200,000, and the white bloods cells 10,000. Blood chemistry showed the non-protein nitrogen to be 34.2 and the sugar (fasting) 83.3 mgm. per 100 c.c. of blood. No tubercle bacilli were present in the sputum.

Roentgen examination — Revealed a homogeneous shadow of increased density in the right apical region. The right dome of the diaphragm was abnormally elevated. Evidence of metastatic malignancy was noted in the right lower lung fields. The distal end of the right clavicle was partially destroyed. No evidence of metastatic malignancy in the cervical or dorsal vertebrae. The gastro-intestinal series was normal.

Clinical diagnosis — Carcinoma, right pulmonary apex with extension into neck and erosion of clavicle.

Clinical course — Biopsies were removed from the mass in the right supraclavicular region, and a diagnosis of anaplastic carcinoma made. He received irradiation therapy without any effect on the tumor mass or in the clinical course. He died July 21, 1939. No autopsy permission obtained.

Case 8 — *History* — A white male, aged 43, cook, admitted to the hospital February 15, 1939 with the history that he was in excellent health until December, 1938 at which time he developed a sharp pain in his left supraclavicular region. Just prior to the onset of the pain he had a cold. He had a non-productive cough for about two years. Has been unable to work since February, 1939. About the first of February, 1939 he developed a productive cough, heavy cough, but no hemoptysis. Loss of weight thirty pounds in two months.

Physical examination — Revealed a fairly well developed but poorly nourished white male appearing acutely ill. Horner's syndrome was present on the left side. Chest examination was indicative of fluid in the left pleural cavity. No lymphadenopathy present. Weakness of the left upper extremity was noted.

Laboratory examination — Urinalysis showed faint trace of albumin, occasional epithelial cells, and a moderate number of white cells. Wassermann and Kahn were negative. The hemoglobin content was 85 per cent. The red blood cells numbered 4,500,000, and the white blood cells 6,400.

Roentgen examination — Revealed left pleural effusion. Following the removal of the chest fluid, a large homogeneous shadow of increased density was noted in the left apical region. Gastro-intestinal series was normal.

Clinical diagnosis — Carcinoma, bronchiogenic, left pulmonary apex (Pancoast type) with pleural effusion, left.

Clinical course — Paracentesis of the left chest was necessary on several occasions. Large amounts of clear amber fluid were obtained. No evidence of tuberculosis found on inoculation of guinea pigs with the fluid. It was impossible to obtain a biopsy on bronchoscopic examination. He received palliative irradiation therapy without improvement. He died March 12, 1939. Autopsy permission not obtained.

Case 9 — *History* — A white male, aged 48, laborer, was readmitted to the hospital April 11, 1939 for treatment of chest condition, type undetermined. He stated that for approximately two months prior to admission he had had pains in the right chest and a severe cough but no hemoptysis. He also tired easily, was dyspneic on exertion and had lost weight recently.

Physical examination — Revealed a poorly nourished and only fairly well developed white male appearing chronically ill. Horner's syndrome was present on the right side. There was restriction of movements of the right upper extremity and flattening of the right upper chest. Dulness to percussion was noted in the right apical region. A mass 2 cms. in diameter was palpable in the right supraclavicular region. The mass was firm. Other small nodules were present in the right neck. Cardiac examination was negative.

Laboratory examination — Urinalysis was essentially negative. Wassermann and Kahn was negative. The hemoglobin content was 80 per cent. The red blood cells numbered 4,460,000, and the white blood cells 10,000. Eight sputum specimens revealed no tubercle bacilli.

Roentgen examination — Revealed a homogeneous shadow of increased density in the right pulmonary apex. Almost complete destruction of the ninth dorsal vertebra was present, the result of metastasis.

Clinical diagnosis — Carcinoma, bronchiogenic, right pulmonary apex (Pancoast type) with metastasis to the ninth dorsal vertebra.

Clinical course — Patient developed a paraplegia while in the hospital, the result of metastasis to the ninth dorsal vertebra. He received irradiation therapy with no clinical improvement. He suddenly began coughing blood and died shortly thereafter on June 14, 1939. Autopsy permission not obtained.

Case 10 — *History* — A white male, aged 65, laborer, admitted to the hospital August 21, 1939 with the complaint of pains in the right chest which began in March, 1939. In April, 1939 he stated that he was treated in a private sanitarium for tuberculosis but that he did not have it. Patient had a non-productive cough. Because of cerebral arteriosclerosis, a reliable history could not be obtained.

Physical examination — Revealed a poorly nourshed white male who appeared chronically ill, who continued to mutter unintelligible phrases. Marked atrophy of the muscles of the right upper extremity and chest was noted. The breath sounds were greatly diminished in the right apical region. Cervical adenopathy noted on the right side. Horner's syndrome was absent.

Laboratory examination — Urinalysis was essentially negative. Wassermann and Kahn negative. Hemoglobin content of blood 80 per cent. The red blood cells numbered 4,300,000 and the white blood cells 6,000. Eight sputum examinations were negative for

tubercle bacill.

Roentgen examination — Revealed changes in the lungs which resembled pulmonary tuberculosis and also an opaque shadow of increased density in the right apex with retraction of the trachea to the right side.

Clinical diagnosis — Carcinoma, bronchiogenic, right, pulmonary apex, tentative; pulmonary tuberculosis; cerebral arterio-sclerosis with beginning mental deterioration; fibrosis of the myocardium.

Clinical course — The patient became progressively weaker and died November 2, 1939. Palliative treatment only was administered.

Autopsy — Revealed an adenocarcinoma of the right pulmonary apex with metastases to the ribs, pleura, sternum, vertebrae, and skin — also pneumoconiosis. The skin over the mid-sternal region contained several small metastatic nodules. The first posterior rib on the right side was eroded.

Case II — *History* — A white male, aged 52, postal carrier, admitted to the hospital March 14, 1940 with the history that since June, 1938 he has had a severe pain in the left shoulder region which radiated down the inner aspect of the left arm. The pain also radiated to the left upper chest region. He had noticed weakness in the left upper extremity and lost fifteen pounds in weight since onset. No cough or hemoptysis.

Physical examination — Patient was poorly nourished and appeared chronically ill and showed evidence of loss of weight. No Horner's syndrome present. Atrophy of the muscles of the left upper extremity was noted. A small area of dullness was palpable in the left apical region.

Laboratory examination — Urinalysis was essentially negative. The Wassermann and Kahn were negative. The hemoglobin content of the blood was 85 per cent. The red blood cells numbered 4,500,000, and the white blood cells 18,300.

Roentgen examination — Revealed a homogeneous shadow of increased density in the left lung near the apex. Thinning and erosion of the left posterior first rib was seen.

Clinical diagnosis — Carcinoma, bronchiogenic, left pulmonary apex (Pancoast type).

Clinical course — He received a palliative course of irradiation therapy without relief of symptoms. He was transferred to another hospital May 8, 1940 nearer to his home for further palliative treatment. A follow-up letter received November 13, 1940 indicated a continuance of the symptoms. Final report is that the patient died Nov. 20, 1940 and that the postmortem examination revealed a carcinoma of the left pulmonary apex with metastases to the left supra-clavicular and infra-clavicular nodes and to the mesentery of the small bowel.

Case 12 — *History* — A white male, aged 52, truck driver, readmitted to the hospital June 19, 1940 with the history that in March 1940 he began to have severe pain in the left shoulder region which radiated down the inner aspect of the left arm to the elbow. He had lost weight and strength since the onset and was dyspneic on exertion. No night sweats or hemoptysis. Had a slight non-productive cough.

Physical examination — Revealed the patient to be well nourished but with weakness and some atrophy of the muscles of the left upper extremity. Horner's syndrome was not present. Physical findings in the chest were negative.

SUMMARY OF TWELVE CASES OF APICAL CARCINOMA OF THE LUNG

Case	Age	Sex	Chief Complaint	Wasting or Weakness of muscle of hand and arm	Rib or Bone changes	Horner's Syndrome	Lung Involved	Treatment	Result	Biopsy	Autopsy	Duration of Symptoms, Deceased Patients
1	51	M	Pain	Yes	No	Yes	Right	Radiation	Died	No	Yes	23 months
2	42	M	Pain	Yes	Yes	Yes	Right	Radiation	Died	No	Yes	5 months
3	44	M	Pain	Yes	Yes	Yes	Right	Radiation	Died	Yes	Yes	11 months
4	62	M	Pain	Yes	No	Yes	Left	Radiation	Died	No	No	11 months
5	50	M	Pain	Yes	No	Yes	Right	Radiation	Died	Yes	Yes	20 months
6	49	M	Pain	Yes	Yes	Yes	Left	Radiation and alcohol injection of sympathetics	Died	Yes	No	10 months
7	51	M	Pain and enlarged nodes in neck	Yes	Yes	Yes	Right	Radiation	Died	Yes	No	12 months
8	43	M	Pain	Yes	No	Yes	Left	Radiation	Died	No	No	4 months
9	48	M	Pain	Yes	Yes	Yes	Right	Radiation	Died	No	No	5 months
10	65	M	Pain	Yes	Yes	No	Right	Symptomatic	Died	No	Yes	11 months
11	52	M	Pain	Yes	Yes	No	Left	Radiation	Died	No	Yes	29 months
12	52	M	Pain	Yes	Yes	No	Left	Radiation	Died	No	Yes	7 months

Summary of cases reported in this paper

Laboratory examination — Urinalysis was essentially negative. The hemoglobin content was 80 per cent. The red blood cells numbered 4,330,000 and the white blood cells 5,200. Wassermann and Kahn were negative. No tubercle bacilli found in the sputum. The electro-cardiogram was interpreted as suggesting myocardial damage and sinus tachycardia.

Roentgen examination — Showed a thickening of the pleura of the left apex but no definite tumor shadow, also partial destruction of the first, second and third left posterior ribs.

Clinical diagnosis — Carcinoma, bronchiogenic, left pulmonary apex with destruction of the first, second and third left posterior ribs, also coronary arteriosclerosis and myocardial damage.

Clinical course — Aspiration biopsy was attempted, but no tumor tissue could be obtained. He received palliative irradiation therapy to the left upper chest region with no appreciable relief. The patient died September 28, 1940.

Autopsy — Revealed an adenocarcinoma of the left upper lobe with extension to the pleura and upper left posterior ribs and to the soft tissues of the left chest wall.

COMMENT

An analysis of the eight cases previously reported by this author in 1937 is as follows: All were white men with an average age of 43.8 years at the time of admission. The right lung was involved in six cases and the left in two. The diagnoses made prior to admission to the hospital were tuberculosis in three, tumor in two, psychoneurosis (hysteria type) in one and neuritis in two. The first symptom in every case was pain in the shoulder and arm on the affected side. Horner's syndrome was present in seven cases and costal or vertebral changes were noted in every case. Six patients were treated with radiation with no appreciable effect; one patient received both radiation and chordotomy with very little improvement in symptoms. An attempt was made to remove the tumor mass in one case. However, because of the involvement of the mediastinum and brachial plexus, this could not be accomplished. Specimens were obtained for biopsy in five of the cases, four of which were squamous cell carcinoma and one was adenocarcinoma. All eight patients are now deceased, one patient living for thirty-two months after the onset of symptoms. The shortest duration of life after onset was six months. The average duration of life from the onset of symptoms to death was 16.7 months. Postmortem examinations were made in three of the eight cases.

Of the seven additional cases reported in 1938 all are now deceased and a complete summary is as follows: All the patients were men; six were white and one a Negro. A primary carcinoma of the terminal bronchioles of the lung was considered the origin in six cases. A primary osteogenic sarcoma of the left femur with metastasis to the right pulmonary apex was the etiologic factor in one case. The right lung was involved in four cases and the left lung in three. Pain in the shoulder region followed by pain radiating down the arm of the affected side was the first symptom in all cases. Horner's syndrome was present in six cases. Costal changes were present in four cases. Histological specimens were obtained in six cases and postmortem examinations made in three cases. Three of the patients received radiation therapy alone with practically no relief from pain or diminution in the size of the tumor. Surgical exploration was done in one case; however, it was found to be impossible to remove the tumor mass. Postoperative radiation was given with no relief of pain. The average length of life after onset of symptoms in the seven cases who are now deceased was 10.1 months. The primary diagnoses made prior to admission to the hospital were neuritis in two cases, tuberculosis in one, tumor in two not stated in one, and the patient who had osteogenic sarcoma of the left femur developed the apical metastatic lesion while under observation.

An analysis of the twelve cases reported in this series is as follows: Eleven were white men and one a Negro male. The average age on admission was 50.7 years. The right lung was involved in seven cases and the left in five. The

ADDITIONAL OBSERVATIONS OF THE 27 CASES OF APICAL CARCINOMA OF THE LUNG

No. of cases	Average age	Race		Lung involved		Histologic data	Average duration of symptoms
		White	Colored	Right	Left	Biopsy or autopsy	
27	46.3	25	2	17	10	21	13 Months

first symptom in every case but one was pain in the shoulder of the affected side. Horner's syndrome was present in eight cases and costal or vertebral changes in seven cases in the apical region. Ten patients received radiation therapy with no appreciable relief. One patient received both radiation therapy and alcoholic injection of the involved sympathetic nerves with some relief of symptoms. One patient received symptomatic therapy only. All of the patients are now deceased and postmortem examinations were made in seven cases. Biopsies were taken in two of the cases in which postmortem consent not obtained. Histological studies indicated the lung to be the primary site of origin of the tumors. The average length of life from onset of symptoms to death in the twelve deceased cases was 12.3 months.

Although Pancoast described what he believed to be a new pathological and clinical entity recent evidence has shown that any tumor in the pulmonary apex may produce the syndrome he describes solely because of its location. The evidence upon which Pancoast based his conclusions was inadequate and especially so since neither gross or autopsy evidence was available. Also no branchial origin has been demonstrated and not anatomic structure designated as the superior pulmonary sulcus exists. Not only widespread metastases can occur but also intrathoracic metastases.

Pancoast stated that the presence of a Horner's syndrome was essential for the diagnosis of a superior pulmonary sulcus tumor however, the time of the appearance of the Horner's syndrome is variable and depends upon how early the inferior cervical sympathetic nerves are involved. For that reason the diagnosis can be made without its presence if the other factors are present. Similarly the costal or vertebral changes are not essential for the diagnosis since they may occur toward the end of the disease rather than when the patient is first seen. Large tumors of the upper lobe of the lung producing Horner's syndrome do not fall into the category of Pancoast tumors.

Less than one hundred cases have been reported in the literature and the great majority of these have been in the American literature during the past five years. This series of twenty-seven cases is by far the largest yet to be reported. More than ninety-five per cent of the cases reported have been in males.

Metastatic lesions from the breast, kidney or adrenal, and from the stomach to the pulmonary apex have been reported as causing the Pancoast type of tumor. Sarcoma of the thymus, sarcoma originating near the pulmonary apex, intrathoracic sympathoblastoma, and others have been mentioned as the etiologic tumors. By far the great majority of the cases reported have been atypical carcinomas of the lung. Since 1936 twenty-seven so-called superior pulmonary sulcus tumors have been diagnosed at the Hines Hospital all but one of which were diagnosed as carcinomas of the lung. These cases were selected from more than two hundred and seventy-seven primary carcinomas of the lung admitted to the hospital since 1931. It is noteworthy that diagnoses of the Pancoast type of tumor were not made at this hospital before 1936. Special studies stimulated by Pancoast's reports have accounted for the more prompt recognition of this type of tumor.

The results of treatment have been very disappointing. The tumors are very radioresistant and are not complicated by secondary infections and abscesses, as compared with carcinoma of the lung in general, where definite palliative results may be obtained following radiation, which tends to clear up the secondary infection about the tumor. Because of the location of the tumor and the mode of extension it is impossible to remove them surgically. There have been reports in the literature of good results following chordotomy for the relief of the pain.

The prognosis is very poor. The average duration of life of the fifteen deceased cases previously reported from the onset of the symptoms to death was 13.1 months; of the twelve deceased cases reported in this series 12.3 months.

SUMMARY

A thorough roentgenologic investigation should be made of the apical region in patients having persistent pain in the shoulder girdle region and other symptoms produced by involvement of the inferior cervical sympathetic ganglia and the brachial plexus.

Because of the symptoms patients having the apical type of lung tumor are generally given a diagnosis of tuberculosis, neuritis, arthritis, or psychoneurosis, before a tumor is suspected.

The prognosis is very poor and response to radiation therapy is very disappointing.

Further evidence is presented to show that the majority of malignant tumors in the region of the thoracic inlet or pulmonary apex are carcinomas of the terminal bronchioles of the lung rather than a new specific type of pathological entity.

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DISCUSSION

Dr. T. J. Wachowski, Chicago: Dr. Stein's presentation of this, the largest recorded series of the so called "Pancoast tumor," justly deserves our commendation. It definitely refutes the impression originally gathered that this tumor is not only a clinical but a histological entity. I was rather surprised to note that so many of Dr. Stein's cases were definitely diagnosed as bronchogenic carcinoma. Other reports in the literature show a much higher percentage of metastatic tumors and of epithelial lesions whose origin cannot be definitely ascertained.

It is noteworthy that Dr. Stein collected twenty-seven cases of this type since 1931. This would suggest that the lesion is not infrequent. As was apparent from some of the cases shown here and has been mentioned in the literature, the Roentgen findings in this condition may be minimal even though the clinical symptoms are pronounced. This situation will undoubtedly lead some of us to suggest the possibility of a pulmonary apical tumor on the strength of minimal Roentgenological evidence. It might be well, therefore, to review briefly some of the conditions that might produce dense shadow over the pulmonary apeces and which might be confused with this anatomicol-clinical entity.

The shadow of the innominate artery, particularly when dilated, often casts a shadow over the medial portion of the right upper lung. The thyroid gland frequently extends over the pulmonary apex and may even extend infraclavicularly to further confuse the picture. Tuberculous changes in the apeces, especially when unilateral and fibrotic, may be hard to differentiate from tumor. Occasionally a tumor forms in a tuberculous area and then the differential diagnosis is indeed difficult. Neurofibromas usually do not give rise to bone invasion or soft tissue infiltration but Ray reports a case in which a neurogenic fibrosarcoma produced a typical syndrome. Other benign tumors may also occur in the pulmonary apex. Very occasionally an apical fluid accumulation, especially if limited to the medial portion of the chest cavity, may be confused with a solid tumor.

I should again like to express my appreciation of Dr. Stein's paper from which, I am sure, we all profited greatly.

THE 5-DAY TREATMENT OF SYPHILIS

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The most significant new development in the treatment of syphilis has been the introduction of the so-called 5-day massive dose therapy for early cases. The method was first used in 1933 at the Mt. Sinai Hospital of New York and because of the encouraging results obtained there it was started as an experimental study at the Cook County Hospital in August, 1940. Obviously, there has not been sufficient time to permit a conclusive evaluation of the method, but because of its great importance from a public health standpoint, and because of the widespread interest which it has aroused, it was deemed advisable to make a preliminary report of the results obtained to date at the Cook County Hospital with this treatment method.

In 1931, Hyman[1] and his coworkers demonstrated on laboratory animals that rapid intravenous injections of chemicals produced the syndrome of 'speed shock' which is similar in its effects to the nitritoid or anaphylactic reactions occasionally encountered when arsenicals are injected intravenously. It was postulated from this that the reaction was one of technique rather than one due to something inherent in the drug; and it was then demonstrated that by decreasing the rate of intravenous flow to a drip method, not only was 'speed shock' avoided, but larger doses of drugs could be given with safety, amounts far in excess of the usual concep-

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Presented before the Section on Public Health and Hygiene, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 21, 1941.

tion of safe dosage. Chargin[2], Hyman and Leifer then applied these principles to the treatment of early syphilis in twenty-five men. Using neoarsphenamine administered by the intravenous drip method over a period of five days, they encountered no untoward effects aside from a high incidence of polyneuritis and other minor reactions. After five years, thirteen of the original twenty-five men were found on repeated examinations to have no evidence whatever of syphilis, and in two cases the results were considered doubtful rather than failures. Even among the ten patients whom it was not possible to follow regularly for five years, some had been observed for a sufficiently long period to warrant the assumption that they, too, were well on the way to recovery.

The significance of the results was immediately appreciated by public health authorities who arranged for a continuation of the study under the supervision of an independent advisory committee. A second group of eighty-six men with early syphilis was then treated with neoarsphenamine, the treatment being carried out at the Mt. Sinai Hospital, and the follow-up studies made by other observers at the various medical schools. Again the clinical response was highly satisfactory. But there was a high incidence of gastro-intestinal and febrile reactions, peripheral neuritis occurred in almost half the patients, and in this series there was one fatal case of hemorrhagic encephalitis.

Mapharsen was then substituted for neoarsphenamine with the hope of reducing the high number of reactions.[3] In the first group treated with mapharsen the incidence and severity of the reactions were reduced, but there was again one case of hemorrhagic encephalitis which, fortunately, was not fatal. One patient suffered a single convulsion, and another a period of disorientation, and there was also one case of exfoliative dermatitis in a man who had received sulfanilamide for gonorrhea. It is important to note that in the whole group of more than four hundred cases in which both neoarsphenamine and mapharsen were used, there were no instances of nitritoid reactions, no cases with hepatic or renal damage and no instances of blood dyscrasia.

In these respects the new method seemed superior to standard treatment procedures; and even with respect to cerebral complications there was reason to believe that the intensive method of treatment carried little more risk. The committee, satisfied with these results, thereupon recommended that the treatment be carried out as an experimental study in other suitable medical centers.

In August, 1940, this study was started at the Cook County Hospital, and to date one hundred seventy patients have been treated. Only those patients are treated who have early syphilis, with primary or secondary manifestations, diagnosed by demonstration of the spirocheta pallida or by positive blood serologic tests. The patients are told that the treatment is still in the investigative stage. Preliminary to treatment each patient is given a thorough physical examination, including roentgenogram of the chest, complete blood count, blood chemical examination, urinalysis, including urobilogen, icteric index determination, and blood serologic determination. After treatment, on the 6th day, the icteric index is again determined and the spinal fluid examined. No one is discharged sooner than two full days after treatment has been completed, and he is told to report to the out-patient department for examination each week for four weeks and thereafter monthly. At these times examinations are made for clinical and serologic relapses and for late toxic manifestations. It is proposed to examine the spinal fluid again after a year has elapsed since treatment.

The treatment requires no specific preparation of the patient. The diet is the ordinary ward diet.

Thus far, mapharsen has been used in the amount of 0.24 grams dissolved in 2000 c.c. of five per cent glucose solution in triple distilled water for the day's supply. In five days the patient receives 1.2 grams of mapharsen. The dosage is the same regardless of weight, age or sex of the patient. The day's supply of the solution is made up in the morning, and with a short twenty gauge needle, the solution is introduced into a vein and permitted to flow at the rate of about forty to fifty drops per minute. A vein of the dorsum of the hand is selected, the needle transfixed with adhesive tape and the hand immobilized by strapping with tongue blades anteriorly and posteriorly to permit free motion at the elbow. A different vein is selected each day, but when necessary the same vein has been used two and three times. At the end of the day's

treatment (seven to eight hours), the patients are permitted to be out of bed.

Of the one hundred seventy patients, 103 were men and 67 were women. The group included 27 white men, 18 white women, 77 colored men and 48 colored women. 52 of the number had primary syphilis; 118 had secondary manifestations. Only 6 of the women patients had chancres. The youngest patient was a girl of 15 yrs., the oldest a man of 53.

REACTIONS FROM INTENSIVE TREATMENT

The reactions observed in our series were similar to those observed by the New York investigators. Fever, nausea, emesis and pain in the arm occurred in almost all of the patients.

The fever was of two kinds. Primary fever, which occurred in one hundred eleven patients, consisted of a sharp rise in temperature, usually at about the fifth hour of the first day of treatment, which dropped by evening and usually was normal again the next morning. This reaction was interpreted as a mild Herxheimer febrile reaction and, unless a patient's temperature exceeded 101.4 degrees, treatment was not interrupted. In a few cases there was also low grade fever on the second and third days of treatment, and in only six instances has it been necessary to discontinue treatment temporarily because of high fever. In such cases the lost mapharsen was made up over the course of the remaining days.

Secondary fever has occurred in sixty patients. It appeared usually on the evening of the last day of treatment, persisted for a day or two, and then spontaneously receded. In six of the patients, on the seventh day, there was a sudden rise in temperature, reaching to 105 degrees in one case. In two instances the fever occurred the day following spinal puncture, but in neither case was there reason to suspect a causal connection between the two. The temperature returned to normal spontaneously in two or three days and there were no sequellae.

The most annoying complication encountered was pain in the arm extending along the course of the vein. In most of the 140 patients who complained of it, the pain was mild, but in some it was rather severe. Attempts to alleviate it with hot dressings or with cold dressings and, in a few cases, with acetylsalicylic acid, were without success. In general, there has been less pain when the intravenous flow has been more rapid, but it is still a bothersome complication, lasting in most cases for but a day or two, and in a few cases throughout the five days.

Nausea and vomiting occurred in almost all of the patients on the first day and were frequently associated with slight headache and dizziness. In a few of the patients nausea was present throughout the course of treatment.

Cerebral complications occurred in two of our patients. One man, a Negro aged twenty-nine with secondary syphilis, appeared stuporous and disoriented on the evening of the third day of treatment. He later had a convulsion so severe as to cause him to fall out of bed. There was no history of epilepsy. On the next day he seemed entirely well and was discharged from the hospital after a few days without receiving the balance of the anti-syphilitic treatment. Three months later the Kahn test of his blood gave a negative reaction, and it is still negative eight months after treatment.

Another Negro man aged twenty-one years, with primary syphilis, on the sixth day, one day after completing his treatment, had a convulsion. This convulsion recurred once on each of the succeeding three days, and on the fourth day he became lethargic, and all deep-reflex signs were found to be positive. Treatment was instituted with large doses of sedatives, glucose solution intravenously, and several attempts at spinal puncture. After five days, during which he was practically comatose, complete paresis of the left side of the body set in. During the first week there was no change, but in the second week there were signs of improvement; and in the following week, although he dragged one leg, he was able to walk with the use of a cane, and by the end of a month there were no longer any signs of his accident. When he was discharged from the hospital two months after treatment, his physical condition was excellent. In his case, too, the blood test, which, before the institution of treatment, gave a three plus Kahn standard reaction, became negative in six weeks and was still negative six months later.

We learned later that, although he had never registered a complaint, he had experienced persistent frontal headache and nausea throughout the five days of treatment and had eaten but little of his food. On the fifth day he seemed somewhat drowsy and, for the first time, complained of headache. We now watch carefully

for symptoms of drowsiness, severe headache, persistent nausea and vomiting, dizziness, changes in personality and confused states, for apparently one or a combination of these constitutes premonitory signs of encephalopathy. There is no way by which to foretell the development of arsenical encephalitis; but, should such warning symptoms be noted in time and treatment instituted promptly, the outcome need not be fatal. The treatment recommended for such a complication is repeated lumbar punctures, sedation with paraldehyde, and cerebral dehydration with intravenous injections of twenty-five per cent glucose solution.

Both of the patients with cerebral complications were among the first twenty-five to receive treatment. At the time, this was an alarmingly high percentage incidence, and, had there not been the example of the New York experiences to go by, it is likely that we should have been discouraged from continuing with our study judging it to be too dangerous. We have since treated, one hundred-fifty additional patients without another such incident.

Toxicodermas have been seen but 5 times in our series. In four cases, there was a morbilliform eruption which lasted for one day and without interruption the course of treatment was completed. The other case was one of ninth day erythema, a biotropic reaction as described by Milian.

Paresthesia of the hands and feet occurred in fourteen of the first eighty patients to return for follow-up studies. Examination of these patients revealed no gross findings. The discomfort, usually mild, developed about two weeks after treatment and persisted for from one to three weeks.

Herxheimer reactions occurred in 16 cases. There were also occasional complaints of pruritus, stiffness of the joints, soreness of muscles, backache, pain in the cervical glands, general weakness, and burning sensations in the mouth, throat and esophagus. Many of these probably would not have been noted but for the unusual circumstances of our study.

Of most significance is the fact that so far in our series of cases there have been no instances of exfoliative dermatitis, or of renal, hepatic, or other parenchymal damage; nor have there been any cases of hemopoietic reactions and, of course, none with nitritoid reactions.*

CLINICAL EVALUATIONS

Final clinical evaluations of our results cannot yet be made because our experience with the five-day treatment method is much too recent, but just as were our reactions, so were our early clinical results similar to those of the New York investigators. We too noted that spirochetes disappeared from the lesions usually in a day or two, and all open lesions healed during the period of hospitalization. The spinal fluid examined in 162 cases was found in each instance to be normal. The late clinical results of the first eighty cases only are recorded, since only the first eighty cases have been observed for five months or more; and in those instances where relapses have occurred, they have occurred in the fourth month after treatment. Of the first eighty cases, fourteen had to be dropped from the study for various reasons. In twenty-eight patients, the blood serologic reactions have reverted from positive to negative, usually in the tenth week, but in some cases it reverted as early as the sixth week, and in a few, the reactions did not become negative until the sixteenth week after treatment. In two cases, the Kahn tests still give positive reactions six months after treatment but the number of Kahn quantitative units are steadily decreasing. Apparently reversal of the serologic reactions occurs earlier in those cases which come to treatment earlier in the course of the infection. In six men, with chancres, treated before the blood serologic reactions became positive, the reactions are still negative, after eight months in the oldest case. In eighteen cases there was progressive improvement as demonstrated by the Kahn quantitative tests of the blood. In some of these cases the Kahn standard test still gave a strong four-plus reaction but the Kahn units have decreased materially. The Kahn quantitative test furnishes an excellent index of serologic improvement. A patient who notes his blood test reducing progressively from two hundred plus down to twenty plus is readily encouraged to return for follow-up studies.

*Since this was written there has been one case with a severe reaction in which there was acute glomerulonephritis hepatitis and pericarditis, from which there was apparent recovery.

Of the remaining cases, three have undoubtedly relapsed and one case has probably relapsed although there was some reason for thinking this case to be one of reinfection. Two patients have had reinfections, and in two other patients there was good reason to believe that there was superinfection. In six other cases the results were "unsatisfactory when last seen." This group included patients whose blood quantitative titres were vascillating rather than decreasing steadily. In some of them the reactions will probably revert to negative in time; in others there may be relapses.

In the cases that have relapsed, serologic relapse occurred first, and clinical relapse followed in a few weeks. In our group, seven patients have been retreated with a second five-day course, with no untoward effects.

CASE STUDIES

In the course of our experiment we encountered some unusually interesting cases. One woman, aged forty-nine, reported with a florid rash of secondary syphilis and in addition iridocylitis affecting one eye through which she could barely distinguish a match flame. On the evening of the first day of treatment the veil had lifted from her eye; vision has since been perfectly normal and her blood serologic reactions have been repeatedly negative for eight months. One young boy reported with recurrent secondary syphilis from previous inadequate treatment. We hesitated to give him the five-day routine for fear of exciting an allergic response. His behavior made him a menace to the community, however, and he therefore was given the treatment which he tolerated well. We have since treated others whom we would at first have rejected as being poor risks. Ten of our patients had been previously treated with one of the sulphonamide compounds for other diseases. We have also treated ten patients with cardiac lesions, two with acute tonsillitis and fifteen with gonorrhea. One young woman reported in her ninth month of pregnancy, just two days before the onset of labor, with a chancre on the labium where it endangered both attendants and the coming baby. She was given the five-day treatment for two full days, delivered a healthy baby on the second night, then resumed with the last three days of treatment with no untoward effects. After twenty-four hours spirochetes were no longer recovered from the chancre and the mother's blood eventually become negative. Two other young women with secondary syphilis in the seventh month of pregnancy, after treatment by the intensive method, gave birth to healthy babies, the older one now eleven weeks of age. The mothers' blood in both instances continues to give a positive Kahn reaction. We have since treated two other pregnant women with early syphilis who are awaiting delivery. One was in her fourth month of pregnancy, the other in the second month. In neither of them have there been any untoward effects.

SUMMARY AND CONCLUSIONS

1. One hundred seventy-five patients with early syphilis have been treated since August, 1940 by means of the intensive intravenous drip method with mapharsen. Clinical results are reported for the first eighty cases, fourteen of whom have been dropped from the study.

2. Relapses have occurred in three patients and probably in a fourth.

3. There have been two patients with reinfections[3] and two others with possible superinfections.

4. In six other cases the results were considered "unsatisfactory when last seen."

5. In six patients treated during the seronegative primary stage of syphilis, the blood tests gave persistently negative reactions.

6. All of the cases that relapsed had been treated originally for an eruption of secondary syphilis.

7. Reactions encountered included one case of hemorrhagic encephalitis, and another with a single convulsion. Phlebitic pain in the arm, nausea, emesis and slight headache were encountered frequently but in general were of minor importance.

8. There were no cases with exfoliative dermatitis, hepatic or renal damage, blood dyscrasias, embolus, or nitritoid reactions, and there have been no fatalities at the Cook County Hospital from this method of treatment.

Though this method shows great promise, it must still be considered as in the experimental stage, for cerebral complications have been encountered and fatalities have occurred in other centers. Thus far there have been reports of only fifteen cases which have been observed for a five year period. Withal, however, it seems likely that the introduction of the intensive intra-

venous drip method of treatment may well prove to be the most significant advance in the treatment of syphilis since the introduction of arsenic.

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DISCUSSION

Dr. D. D. Elliott, Oak Park: I had not planned to make any comments here today at all. The reports of progress which you have just heard from one of our clinical experimental stations in this state are quite similar to the progress reports which we are obtaining from all the other stations in the midwest. The hospitals cooperating with us in this district are in Detroit, Cleveland, Indianapolis, Minneapolis, Madison and Des Moines. This group of clinics has treated, up to this afternoon's report, 591 cases. The cases have all been early syphilis. The number of pregnancies has been 9 or possibly 10. There have been only two fatalities in this group. The complications observed, as Dr. Rattner reported, are relatively high on the first day, with the greater number of the patients having one complaint or another, so that practically all of them have some disturbance on the first day or two. The severe reactions were difficult to classify. Those that have had some cerebral complications have recovered without any sequelae or permanent damage that we have seen in six to eight months' observation. The longest observation time in any midwestern case has been 460 odd days.

There are no conclusions to be drawn from the experiment to date except that we can at least show the trend in the cases treated. We can see that a great number of early cases of syphilis will become and probably remain negative serologically after a very short period of treatment. In some cases immediately following treatment a rise in the serology is observed which, however, becomes negative within 60 to 90 days. These patients with sero negative findings apparently are "cured." There are cases in this category that have been re-exposed to open cases — positive cases that have also been checked — and these "cured" patients have apparently been reinfected after having remained absolutely negative for a considerable period of time, not years but after weeks, months — six months, seven months, etc.

For the purpose of our study, however, and over the objections of the clinicians, I have arbitrarily ruled that these cases are charged as failures because, as I told Dr. Rattner and the other men in the hospital, they have failed to educate these patients. From the public health standpoint they failed to inoculate those patients with the idea that they should refrain from extraneous contacts. From the strictly therapeutic standpoint there is still considerable doubt, but I am inclined to agree that they are reinfections.

In conclusion I might state that it would seem that the results of this work so far would warrant the continuance of the study. The public health aspects of this form of handling early cases of syphilis are of great value to the community because they take the patient out of circulation. Dr. Hoyne commented on the success of results which could be obtained by simple isolation of the patient; treating a patient with a chancre as though he were an acute appendix and making hospital emergency out of an early case of syphilis, treating him as though he were really an infectious patient, is a forward step. By taking this type of patient out of circulation in the community is a safeguard from further spread of the disease because the majority of these patients have contacts which extend three and four times over. In some of the clinics, 60 per cent of all new cases to be admitted into the hospital came from initial cases. In one series of infections reported — and here I should include Alaska because the Alaska Health Office is keeping in touch with us — there were six cases of primary syphilis out of one source. In conclusion we can say that approximately 90 per cent of the patients which we have observed so far have obtained what we might call "cures." They certainly are progressing as well, if not better than any one had anticipated they would.

The subject of fatalities and severe reactions is one which we cannot predict. We cannot select and say which one will have reactions. One boy, an excellent physical specimen, a 185 pound lumberjack up in Piny Woods, wanted to be treated. He had a fatal cerebral accident two days after the treatment was completed. The girl from whom he obtained his infection was treated at the same time and has been observed now for seven months and is perfectly negative.

Another death which occurred in the midwestern group occurred in a woman about 40 years of age with an extreme hypertension — 180/100, chronic alcoholism, etc. Likewise her accident did not occur until after the completion of her five days of therapy and while she was still held in the hospital for the observation period she went into a state of mental confusion on the second day after therapy and died within 24 hours.

Autopsy findings have been extremely difficult to evaluate. In both these cases autopsies were obtained. Clinically the death seemed to be a type of encephalitis. Microscopically and macroscopically it was difficult to reach a diagnosis. The microscopic sections of the brain have not all been reported, but they are not convinced that these were true encephaloid deaths.

So we are continuing the study and I hope that as the years and the next records come along we will be able to work out, with the help of the men stationed about the country, some mechanism for con-

trolling syphilis by better treatment early in the infectious stage.

Dr. Ben Reitman, Chicago: Why have we not devoted more time to prevention? No one can spread syphilis but the syphilitic, and it seems that you can teach the syphilitic patient how to take care of himself. Why can't you give them a little package containing some soap or rubber or something? Also, why is it that the United States Public Health Service now appropriates much money and time to cure syphilis in five days when they hesitate to spend a nickel to prevent syphilis?

Dr. Elliott: The patients in the early stage of about 8 per cent of the cases show some evidence of spinal fluid changes, and in all of our early cases the secondaries were a little bit higher. I might state that in the entire midwestern group 88 per cent of cases have had spinal fluid examination during the period of convalescence. We are going to continue our observations on these cases. I do not think there is another group that has had as many observations of spinal fluid in early syphilis as we have had here.

Of course, I know Dr. Reitman believes in prevention, and so do I. I do not believe the government feels that we should pay a nickel for present prophylactics, and besides there is a one cent sale on soap (Dr. Reitman's favorite remedy) at drug stores practically every day.

Dr. Herbert Rattner, Chicago: I am glad to have Doctor Elliott's data with regard to the results in other treatment centers. It is significant that the results at the Cook County Hospital are running a curve that is parallel to that in other centers. Apparently we have encountered fewer reactions from the treatment and we have been fortunate not to have a fatality. Doctor Elliott mentioned, as an advantage of this treatment-method, the fact that the patient is isolated during the time that his lesion is contagious. That, of course, is very important from the standpoint of public health. There is, however, one other advantage to the patient himself which should be stressed. Each patient will have had his fully prescribed course of treatment. There will be no lapse, and lapse in treatment, it is recognized, is an important factor in the production of late sequellae. True, it remains to be learned whether the prescribed course of treatment is sufficient to effect a cure of the disease. The five-year results of the first group to be treated by this method in New York are encouraging in this respect, for recent studies seem to indicate that, if for five years after treatment a patient gives no evidence whatever of syphilis, the prognosis in his case is excellent.

The intensive method of treatment is an important contribution that does credit to American Medicine. It was developed in the traditional American manner by a team composed of practitioners in dermatology and internal medicine based on a groundwork laid by a pharmacologist, and the studies were carried out in a privately endowed charitable institution. The United States Public Health Service has done a fine thing to sponsor the study in other centers.

PARAVERTEBRAL ALCOHOL INJECTION FOR RELIEF OF CARDIAC PAIN

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CHICAGO

Since Jonnesco's[1] original operation in 1916 many different surgical procedures have been recommended to relieve the pain of angina pectoris. They can be divided into three groups, (1) operations upon the nerve supply of the heart, (2) thyroidectomy to decrease the work load of the heart, and (3) operations designed to improve the blood supply of the heart. Although thyroid ablation as recommended by Blumgart, Levine, and Berlin[2] and the operation to improve the blood supply of the myocardium originated by Beck[3] have given good results in about 50% of the cases, they are both radical procedures with a high mortality and are too severe for poor risk cardiac patients. Operations upon the nerve supply of the heart have given the best results of all in such cases. However, it was not until recently when the cause of cardiac pain and its conduction mechanism were better understood that the neurosurgical treatment of angina pectoris was placed on a rational basis.

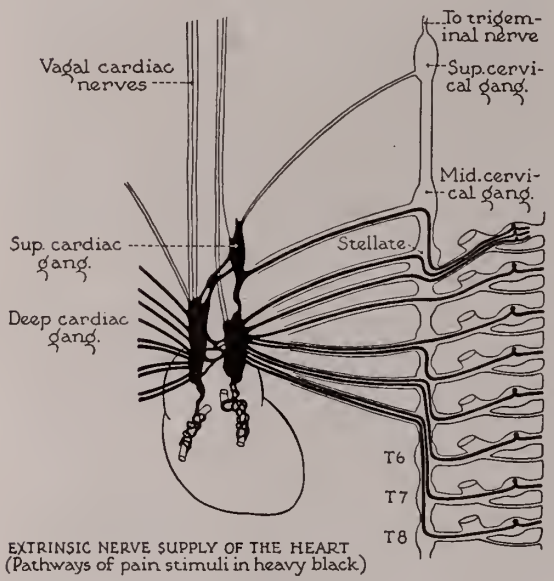
The consensus of present opinion is that cardiac pain is due to ischemia and anoxia of the myocardium. Mechanical stimulation of the nerve ends in the walls of the aorta and the coronary arteries by stretching or by arterial spasm as a primary cause of the pain is not supported by the more recent investigations, but in view of the presence of vasoconstrictor fibers in the nerves of the heart it is possible that myocardial ischemia due to prolonged spasm of branches of the coronary arteries of reflex origin may cause pain in some instances.

The nerve supply of the heart consists of branches from the cervical portion of the vagus and branches from the cervical and upper 5 or 6 thoracic sympathetic ganglia on each side. In general the vagal fibers are efferent and their function is inhibitory to the heart. The afferent fibers contained in the vagus convey impulses from the heart concerned with reflex vasomotor responses. The sympathetic nerves contain both

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Read before Chicago Surgical Society, May 2, 1941.
Read before Illinois State Medical Society, May 22, 1941.

afferent and efferent fibers, the latter being the augmentary control of the heart. Impulses from the heart which eventuate in pain have been shown to be conducted by afferent fibers which travel in the sympathetic nerves to the middle and inferior cervical and upper 5 or 6 thoracic ganglia,[4] mostly on the left side (Figure 1). After reaching the sympathetic chain most of these fibers pass directly through the ganglia and the white rami to the spinal nerves and thus enter the spinal cord. Others descend in the chain as low as the 8th or 9th thoracic ganglion and then to the spinal cord. This explains the radiation of cardiac pain to the shoulder and the arm and to the chest and upper abdomen.



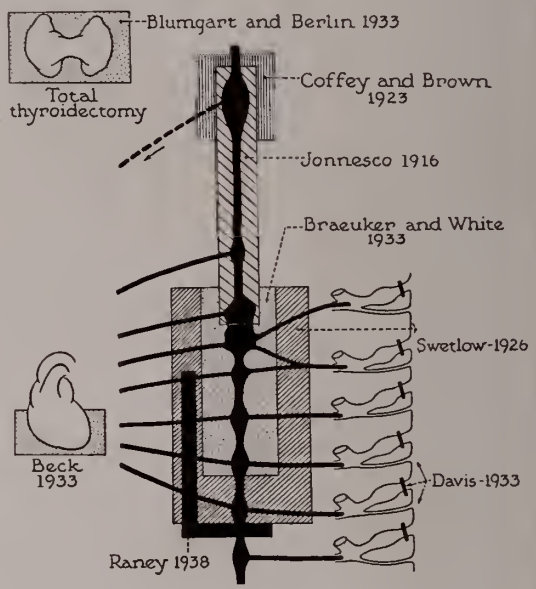
EXTRINSIC NERVE SUPPLY OF THE HEART
(Pathways of pain stimuli in heavy black)

Figure 1

sympathetic nerves controlled coronary vasodilation. Recent experimental evidence[8], however, seems to indicate that the vagus carries coronary dilator and coronary constrictor fibers and that the predominent action of sympathetic nerves seems to be vasoconstriction as in the peripheral blood vessels.

In Figure 2 we have shown the portions of the sympathetic nervous system attacked in the various operations designed to relieve cardiac pain.

In 1916 Jonnesco[1] recommended removal of the cervical sympathetic ganglia bilaterally. He based the operation upon the theory that angina pectoris was due to impulses conveyed from the heart by afferent fibers in all the cervical sym-



SURGICAL MEASURES TO RELIEVE CARDIAC PAIN

Figure 2

Angina pectoris manifested by pain in the region of the face cannot be explained on a basis of conduction by afferent sympathetic fibers because of the absence of such fibers in the superior cervical cardiac nerve and in the sympathetic trunk above the middle cervical ganglion.[5] One theoretical explanation for this pain is that cardiac stimuli reach the face by way of afferent vagal fibers that join the superior sympathetic ganglion and then go to the trigeminal nerve.[6] Another possibility is that the pain is the result of sympathetic efferent effects upon the skin and blood vessels in this region.[7]

For many years it was believed that the vagus controlled coronary vasoconstriction and that the

pathetic nerves. Of the reports in the literature in which this operation was performed the pain was relieved in 58% of the cases. Although the operation was based on a partially erroneous assumption the relatively high percentage of successes is probably due to the removal of the inferior cervical ganglion, which, it is now established, conveys the majority of the sensory fibers from the heart.

Coffey and Brown[9] recommended the removal of the left superior cervical ganglion. In a recent report by Kerr[10] good results were obtained in 14 out of 30 cases in which the locations of the pain varied from the precordium to the face.

The only way of explaining these results is to assume that coronary vasoconstrictor fibers are interrupted by the operation.

In 1925 Mandl[11] obtained relief from pain in cases of angina pectoris by anesthetizing the stellate and the upper dorsal sympathetic ganglia with novocaine. A year later Swetlow[12] recommended paravertebral injection of alcohol to destroy the rami and the ganglia for permanent relief in such cases.

In 1933 White[13] demonstrated experimentally and clinically that removal of the stellate and the upper 5 thoracic ganglia abolished cardiac pain in almost all instances. In spite of such good results however, he considers the operation too severe to use in all cases of angina pectoris and recommends it only in selected patients. Danielopolu[14] is opposed to any operation which includes removal of the stellate ganglion because of the great danger of depriving the heart of accellerator fibers. He suggests an operation consisting of removal of the superior and middle cervical ganglia and their cardiac branches, severing the rami from the stellate to the cervical and 1st thoracic spinal nerves, the vertebral nerve and the vagal cardiac nerves. Leriche[15] formerly conformed to this view and performed a similar operation, but more recently he has changed his views on the subject and now recommends stellate ganglionectomy. In 1933 Davis[16] reported a case of severe precordial pain in a young man in whom complete relief was obtained by section of the dorsal roots of the upper 6 thoracic nerves through a laminectomy.

In 1938 Raney[17] reported good results in 11 cases of angina pectoris after sectioning the thoracic cardiac nerves and the sympathetic chain below the 5th ganglion. He based his operation upon the theory that the pain was due to efferent in impulses going to the heart by way of the thoracic cardiac nerves and leading to coronary artery spasm. Our experience with the Raney procedure is limited to only one case in which the operation failed completely to relieve the pain; and it is significant that relief from pain in this patient followed alcohol injection into the left stellate ganglion at a later date.

We wish to present our experience over a period of 5 years with the method of paravertebral alcohol injection in the treatment of 22 cases of severe cardiac pain. As we have mentioned before this method was first introduced by Mandl in 1925 and Swetlow in this country in 1926. More recently J. C. White[18] of Boston improved the technic and placed the treatment on a more rational basis. It appears to be based upon sound anatomical and physiological facts. The cause of the cardiac pain is ischemia or anoxia of the myocardium as was demonstrated by Sutton and Lueth;[19] Pearcy, Priest, and Van Allen;[20] Lewis;[21] and Katz.[22] The pain stimulus is conducted to the central nervous system by way of afferent fibers in the sympathetic nerves which converge to pass through the inferior cervical and the upper 5 thoracic ganglia as demonstrated by Ionescu,[4] Kuntz,[4] Heinbecker,[4] Braeucker,[4] and White.[13] Surgical removal of these ganglia in the dog has been shown by White, Atkins and Garrey[23] to prevent cardiac pain stimuli from reaching the central nervous system, and in a few reported cases of Braeucker and of White the results of this operation in man have been good. Since this is not feasible in more than a few selected cases because of the magnitude of the operation, chemical destruction of the ganglia or their rami seems to be the next procedure of choice. That this can be done by careful injection with alcohol has been amply demonstrated in the laboratory and in the clinic. In a collected series of 125 cases of angina pectoris reported by Levy,[24] Marvin,[25] and White[18] paravertebral alcohol injection gave complete or partial relief from pain in 85% of the cases.

Method and Results: All of our patients were hospitalized. A sedative such as phenobarbital was given to overcome any apprehension before the injection which was performed in the patient's room. The injections were made on the side of severest pain, but in cases with retrosternal pain we injected the left side first. The patient is placed in the prone position with the chest on a pillow and the neck flexed anteriorly (Figure 3). The landmarks for the insertion of the needles are the spinous processes. Because of the caudal tilt of the spines of the vertebrae the 7th cervical spine lies opposite the 1st rib, the 1st dorsal spine opposite the 2nd rib, etc. The ganglia and their rami lie in the loose areolar tissue over the transverse processes in the triangular space between the pleura and the body of the vertebra. They are separated from the intercostal nerves by the internal intercostal

muscle and membrane. A long fairly flexible needle is inserted directly anteriorward through previously anesthetized skin about 3-4 cm. from the midline opposite the 7th cervical to the 5th dorsal spines until it strikes the transverse process at a depth of 3-5 cm. At this point it is well to inject 1 cc. of 1% procaine solution to prevent pain as the needle is forced over the inferior edge of the transverse process. It is then tilted about 20° to the midline and inserted another 2-3 cm. until the point touches the body of the vertebra. It is important that frequent aspiration be performed throughout the procedure to make certain that the needle has not entered a blood

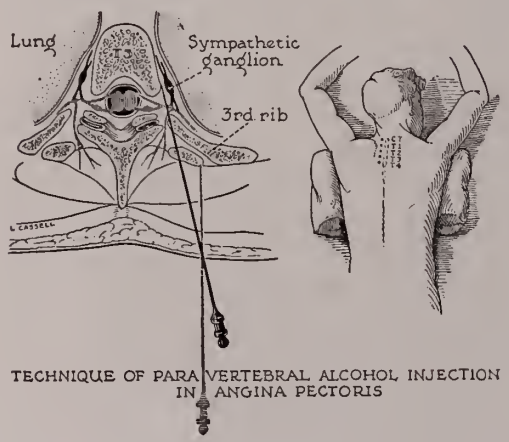


Figure 3

vessel or the pleura or the spinal canal. When all the needles are in place 2 cc. of 2% procaine solution is injected through each as a diagnostic test. If they are placed properly there will be complete anesthetization of the ganglia within 15-20 minutes. This will be evidenced by development of Horner's syndrome and elevation of the skin temperature in the upper extremity of the side injected. When these signs of sympathetic nerve anesthetization occur 4 cc. of 75-95% alcohol is injected slowly through each needle and the needles withdrawn. The fluid remains between the pleura and the intercostal membrane and bathes the ganglia and rami. The degree of destruction of the ganglia and the rami that results depends upon the accuracy of the insertion of the needles.

Because of the fact that it is a blind procedure and because of the close proximity of the ganglia to important structures the injection is not without danger. The dangers of injecting the solutions into the pleural cavity or the lung or into the spinal canal can usually be avoided by frequent aspiration and careful technic. Diffusion of the alcohol into the region of the peripheral nerves causes a chemical neuritis in about 20% of the cases. Fortunately in most instances the neuritis is of a mild character and is easily controlled by sedatives. Occasionally a short period of anesthesia in the areas supplied by the upper thoracic nerves will follow the injection.

Horner's syndrome developes in about 75% of all cases injected and remains for a long time in about 30%. The persistence of this sign indicates destruction of the stellate ganglion. This is desirable, and our best results are obtained in these cases, but its absence does not always mean an improper injection because destruction of only the rami will relieve cardiac pain.

In the past 5 years we have performed paravertebral alcohol injection 33 times in 22 cases suffering from cardiac pain. (Tables 1 and 2). All were of the severest type of angina pectoris and had been on medical management without relief for long periods. About one third had almost continuous pain. Complete relief from pain was obtained in 7 of the cases. In 9 cases the severity and frequency of the attacks were improved 50% or more. Altogether 73% of our cases obtained complete or partial relief from the pain. There was no improvement in 6 cases.

RESULTS

No. of patients	22	
Complete relief	7	73%
Partial relief	9	
No relief	6	27%

TABLE 1

There were 6 cases of peripheral neuritis which lasted from 1 day to 6 weeks. Almost all of these were among our early cases. One case developed a recurrent laryngeal nerve paralysis which lasted 2 months and subsided without treatment. This patient had received more than usual amount of alcohol in the region of the stellate ganglion. The apex of the lung was punctured in one of our cases and although the procedure was discontinued before alcohol was injected the patient developed a valvular pneumothorax which was followed by pneumonia and death 7 days after the insertion of the needle.

PARAVERTEBRAL ALCOHOL INJECTION FOR RELIEF OF CARDIAC PAIN

Name Age	Clinical Diagnosis	Sites Inject	Pain Relief	Duration	Remarks
Mr. S. 60	Coronary sclerosis	L.S-T5	75% 50%	2 mo. 2 yrs.	Neuritis 2 wks.
Mr. G. 63	Coronary sclerosis Bedridden 2 mo.	L.S-T5	50%	3 wks.	Neuritis 6 wks. Died 1 yr.
Mr. B. 15	Rheum. Endocard. aortic lesion, 2-10 attacks of pain daily	L.S-T4 L.S-T4 R.S-T4 L.S-T4	50% 50% 100% 50%	 1 mo. 2 mo. 1 mo.	 Neuritis Died of myocardial insufficiency
Mr. P. 64	Coronary sclerosis	L.S-T4	100% 50%	9 mo. 6 mo.	Cardiac invalid when seen last.
Mr. A. 56	Angina pectoris	L.S-T4 R.S-T2	50% 50% 75%	4 mo. 6 mo. 3 yrs.	 Doing light work
Mrs. C. 48	Angina pectoris	L.S-T4	100%	10 mo.	Doing light work
Mrs. G. 50	Hypertensive heart dis. Substernal pressure	L.S-T4 L.S-T4 R.S-T2	0		
Mr. B. 69	Coronary sclerosis	L.S-T2	0		Died 6 mo. Coronary thromb.
Mrs. F. 53	Hypertensive heart dis. Precordial pain 2 yrs.	L.S-T4	75%	3 yrs.	Neuritis 10 days Doing light work
Mr. B. 48	Angina pectoris 2-3 attacks daily	L.S-T4	50% 75%	6 mo. 2 yrs.	Working as tailor
Mrs. R. 62	Coronary sclerosis 4-8 attacks daily Bedridden 2 mo.	L.S-T4	100%	1 day	Died suddenly. Necropsy. Fresh clot in coronary.
Mr. N. 75	Coronary sclerosis Bedridden	L.S-T4 R.S-T4	0		Died 10 mo. myocard. insufficiency
Mrs. T. 63	Coronary sclerosis Bedridden 1 mo.	L.S-T2	75%	1½ yrs.	Died 1½ yrs. pneumo- nia & myocardial insufficiency
Mr. M. 50	Angina pectoris	L.S-T2	75%	2½ yrs.	Working as salesman
Mr. B. 48	Coronary sclerosis 4 yrs. Precord. pain on slightest exert.	L.S-T4 No alcohol	0		Pneumothorax, pneu- monia, death 1 wk.
Mr. W. 52	Angina pectoris	L.S-T2 L.S-T2	50% 50%	3 mo. 1 yr.	Working when seen last
Mrs. D. 58	Coronary sclerosis Hypertensive heart d.	L.S-T2 L.S-T5	0		Neuritis 6 wks.
Mr. F. 46	Angina pectoris 1-6 attacks daily	L.S-T2	100%	1½ yrs.	L. Laryng. paralysis 2 mo. Working
Mr. S. 59	Coronary sclerosis Pain slightest exert.	L.S-T5	100%	1 yr.	Working
Mr. G. 53	Angina pectoris Luetic aortitis	L.S-T4 L.S-T4	0		
Mr. McM. 49	Angina pectoris	L.S-T2 L.S-T5	50% 100%	2 mo. 1 yr.	Working, travel. salesman
Mrs. L. 54	Angina pectoris	L.S-T2	75%	7 mo.	Previous Raney oper. without relief.

TABLE 2

Another patient who had a true status anginosus for about 1 month was completely relieved by an injection of the ganglia but died suddenly 24 hours later without having been out of bed. Autopsy revealed a fresh thrombus completely occluding the left descending coronary artery.

Of the 22 patients treated 7 have died since, the two previously mentioned and 5 others. One patient died three months after the first injection from rheumatic endocarditis with congestive heart failure, one died from pneumonia 9 months after the injection and 3 from coronary heart disease one and two years after the injection. One of the latter did not get any relief from the treatment.

Most of the patients that improved were able to return to their former occupations. Some continued to have other symptoms of myocardial weakness as dyspnea and a sense of fullness in the chest for a considerable time and have

learned to substitute these symptoms for the cardiac pain which had previously acted as a danger signal. Some of our patients remained free from pain even when regeneration of the sympathetic fibers had taken place, as evidenced by disappearance of the Horner syndrome and recurrence of sweating in the previously anesthetized area. The patients that improved showed no change in the electrocardiogram after the injection and there was no interference with the mechanism producing acceleration of the heart in any of our cases.

Aside from complications mentioned one of the commonest objections of internists to this and to all other methods of relieving cardiac pain is that elimination of the pain in angina pectoris removes the danger signal of myocardial insufficiency and that such patients might continue exertion to the point of danger. Although this might be true theoretically, practically it is not so. Precordial pain is not the only symptom of myocardial ischemia, the patient usually experiences dyspnea, palpitation, and weakness, symptoms which are as easily recognized as pain. Our patients were able to recognize those symptoms, paid heed to them and were relieved by rest and nitroglycerine.

It must be emphasized that a surgical procedure for relieving cardiac pain is recommended only in cases in whom medical treatment has failed. In those patients the removal of the fear and suffering has a positive benefit not only psychically but also medically by decreasing the work of the heart, just as large doses of morphine that physicians use to such a good effect in the early stages of acute coronary occlusion. Futhermore, in view of the recent evidence pointing toward the predominently vasoconstricting action of the efferent sympathetic fibers, it is possible that destruction of these fibers along with afferent fibers by the alcohol results in coronary dilatation.

CONCLUSION

In a series of 22 cases of cardiac pain 73% obtained complete or partial relief from pain after paravertebral alcohol injection. The method is simple and relatively safe and can be repeated when necessary. The objection that the operation removes the danger signal of coronary insufficiency, pain, is theoretical. The patient soon learns to heed other signals and does not do himself harm. The relief of pain is not only symptomatically desirable but actually reduces the work of the heart by giving the patient a chance to rest and relax.

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RHEUMATISM: PRACTICAL METHODS OF STUDY AND NEW PHASES OF INVESTIGATION

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I. INTRODUCTION

Since rheumatism is first in prevalence of chronic diseases,[1] second in producing disability, and has been common to all races, ages and climates for centuries, we have undertaken this paper. It is our aim to present both a practical approach to the study of rheumatic cases and some newer methods of study and investigation. These conclusions have been reached as a result of ten years of study of rheumatic cases started at Rush Medical College and the Presbyterian Hospital under the direction of Dr. Wilber E. Post. It is generally understood that more time should be spent in investigating cases before treatment is begun, as the patient is often subjected to various methods of treatment without an adequate study being made first. Our clinical studies and investigative work which will be presented in this and following papers has been conducted with the common every-day problem of rheumatism as we have encountered it in private and hospital practice. We have approached each case with the same purpose of determining the individual cases, and have not attempted to fit them into a standard classification unless the results of the investigation led to such a conclusion.

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The definition of rheumatism is vague and indefinite as pointed out by the Editors of the Rheumatism Reviews. Since they have carefully listed the conditions that they think should be included in the field, we have made our terminology conform in general to the same plan. We have not attempted to present cases from all the classifications given in the Reviews, but rather those which are the problem of the average physician. We have tried to limit our studies to the disturbances in the joints, nerves, muscles, and tendons, and the significance that a deranged physiology has upon such disturbances.

Since the etiological factors of rheumatism are obscure, it is difficult to set up absolute criteria for diagnosis. Rather, the patient must be studied as a complete medical problem. In the first place, the history is very important, as is the social background, economic status, emotional reactions, nutritional state, fatigue and condition of the nervous system, all have a definite relation in such cases. This is especially true if emotional disturbances are present as they may be responsible for vasospasms and interference with circulation around the joints.[2] In addition to a very complete history, a thorough physical examination with laboratory tests must be made to eliminate those conditions outside the field, such as metastatic growths, diseases of bones, etc. This also helps classify the type of rheumatism. Because of the paucity of findings, a process of elimination may be necessary in order to decide whether rheumatism is present, and if so, what type. On the other hand, there are definite cases of arthritis and neuritis, which from the standpoint of diagnosis are simple, but may present complicating factors such as having a mixed type present in the same patient.

Too frequently the patient with rheumatism is started on treatment, or quick judgement of removing teeth and tonsils is made with insufficient evidence. This treatment may be the indiscriminate use of vaccines and filtrates in cases where the patient has a metabolic or vitamin deficiency, anemia, or some other contributary disturbance in his physiology. These indiscriminate practices have caused many physicians to dispute the theory of focal infection in rheumatic cases which was emphasized by Dr. Frank Billings in 1911. His first important paper on Chronic Focal Infections and their etiological

relationship to Arthritis and Nephritis[3] was read before the Chicago Medical Society, November 15, 1911. His first statement was "There is nothing new in the principle involved in the subject of the paper." He described his methods of study which were carried out by Drs. W. E. Post, D. J. Davis and E. C. Rosenow. In these studies streptococci usually of the green producing variety were isolated from apical abscesses, tonsil crypts etc. Twenty-four hour living cultures were injected into rabbits with reproduction of chronic non-suppurative changes in the joints. They were able to recover streptococci from the joints of such animals. In the original work it was pointed out that streptococci from patients who had no evidence of systemic lesions often yielded a similar type of streptococcus which might produce joint lesions in animals. Further experimentation was suggested and the use of autogenous vaccines was discussed with inconclusive results. He concluded with these statements regarding cases of arthritis in which suspected foci of infection were removed. "General hygienic treatment has been necessary in all classes of patients treated and one would naturally infer that this general treatment had a good deal to do with the result. With the arthritis cases, it has been found just as necessary to continue a long and yet variable rest treatment with good food, restorative tonics and the various forms of individual treatment usually employed in the management of this group of diseases. Casts have been applied to extremities, or to the spine, contracted tendons have been stretched and other necessary manipulations and corrective measures used.

In those patients who, for some reason, could not or would not follow out the details of after-treatment, rest, etc., improvement was not as soon obtained or not as fully secured as in those patients under command. This, however, does not mean in my opinion that the final results are due to the after-treatment alone, for in past years, the same care in general treatment did not give the same degree of good results that has been obtained in later years by the methods suggested in this paper. In some cases, obvious focal or local infections were found, and yet the patient had no evidence of systemic disease. Was something lacking in those that developed arthritis, nephritis, etc.? Or was a protective agency present in others? The low resistance of some people may be due to trauma, fatigue, debility, exposure etc., and further studies should be made to see why these differences occur."

Some of the important points in Dr. Billings' paper that are often forgotten are: that partial removal of tonsils often left the condition worse than before, and that small imbedded tonsils are often a source of more trouble than large tonsils. He further pointed out that suspected foci should not be removed unless there was clinical evidence of disease, and that the suspected focus should not be removed until a thorough study has been made of the case, and any other factors corrected that might be a source of trouble. Dr. Billings further insisted that general treatment should be given the same emphasis as if a suspected focus had been found. In 1932 shortly before Dr. Billings death, he spoke of the damage to capillaries as the explanation of action when a focal infection was present. This is in line with the capillary changes emphasized by Pemberton in which vaso-constriction etc., are thought to play a large part in disturbing joint circulation.

The plan of study and the work to be reported in this and subsequent papers is an out-growth of the problem as outlined by Dr. Billings. The subject will be discussed under the two following headings:

1. Practical Methods of the Study and Treatment of Rheumatic cases.
2. Newer Methods of Investigation in Connection with Rheumatic cases.

II. A PRACTICAL METHOD OF STUDYING RHEUMATIC CASES

There are certain fundamental procedures that are necessary in order to classify and to study a case properly. These should be carried out before starting treatment, having tonsils removed, etc. The following procedures and their interpretations are suggested as being significant, but all may not be essential to make a decision regarding the proper treatment. The following plan of study is suggested. There are three general classes.

1. A complete history, especially regarding the onset of the disease, occupation, family background, age, metabolic disturbances, glandular

activity and infections, especially those of childhood.

2. A thorough physical examination.

3. A complete blood count: a secondary anemia is frequently present in rheumatic cases. A correction of this factor should obviously be made early in the case. The reason for the anemia may vary from a bleeding peptic ulcer to nutritional disturbances and rheumatic symptoms may be secondary.

4. Complete urinalysis to rule out kidney disturbances or systemic diseases which indicate the patient's general condition, e.g., neuritis associated with diabetes.

5. Sedimentation rate to aid in the diagnosis or to use as a comparison in estimating whether infectious processes are subsiding.

6. Basal metabolism to determine whether hypothyroidism or hypometabolism is present as a contributing factor. In this connection it should be mentioned that a low rate of ovarian activity may be present also, as Francis Hall[4] and others have pointed out. This may have a bearing on the basal rate.

7. Blood chemistry studies, especially total and non-protein nitrogen, cholesterol, C vitamin level and uric acid, as gout is a very common disturbance.[5]

8. Stool examination; this should include cultures, examination for parasites, undigested food and blood.

9. Ewald test meal; many patients are discovered to have an absence of free hydrochloric acid, whose digestion and nutrition improve with its addition.

10. X-rays:
 a. Teeth for evidence of infection.
 b. Sinuses if indicated.
 c. Colon fluoroscopy for diverticulae etc.
 d. Certain joints if unusual bony changes are suspected.

11. Bacteriology:
 a. Cultures from nasopharynx, tonsils, and sinus drainage, if present.
 b. Cultures from aspirated joints.
 c. Cultures from the prostate and cervix.
 d. Blood cultures in certain cases.
 e. Cultures from rectal crypts.

12. Serology:
 a. Kahn or Wasserman.
 b. Complement fixation if indicated.

To illustrate the application of these procedures, the following cases are described and discussed briefly.

CASE 1.

P. DeC. A man 36 years old complained of pain, redness and swelling of both large toes for two days. He had a previous attack two months before which lasted 3 or 4 days. There was nothing else in the history that had any relation to the complaint. Physical examination was negative except for swelling and redness in the large toes, the presence of 30 pounds overweight, a low blood pressure, 110/85, pulse rate of 68, and several small tonsil remnants. Various laboratory examinations revealed a slight anemia. The blood chemistry showed a total NPN of 35, cholesterol 242.4 and uric acid 6.8. The increased uric acid and cholesterol are of course frequently associated with a low metabolic rate. The basal rate was minus 12%. Throat and nose cultures showed streptococcus hemolyticus and some staphylococcus aureus. X-rays of the feet showed no bony changes. The patient was put on a low purine diet, thyroid extract, iron and colchicine. The symptoms disappeared and he had no trouble until two years later when he complained of pain and soreness in both knees. The blood chemistry showed uric acid 5.7 and NPN 36.7. He still had a slight anemia. The basal rate was plus 2% and the sedimentation rate was 20 mm. in four hours. He was still taking the thyroid irregularly but had stopped the rest of his treatment as relief had been obtained. The same treatment as outlined above was given with relief of symptoms. Two years later he had another recurrence with pain in the knees and the second finger of the right hand. The uric acid was 5.3. He was again put on the above treatment with relief of symptoms and is free at present. The patient discontinued his treatment after each recurrence when relief was obtained.

Case I represents a typical case of arthritis associated with a disturbed metabolism in which there was an increased amount of uric acid present in the tissues. Even though there was a possible focus of infection as shown by the throat culture, it was not the primary issue. As a result of the laboratory tests, it was obvious that a definite metabolic disturbance was present. Therefore, the tonsil tags were not removed and treatment was directed first toward correcting the metabolic disturbance. As suspected from the findings and proved by the treatment, this was a definite case of gout. If the tonsil remnants had been removed without any treatment, failure to improve could have been given as an argument against the theory of focal infections. It is in such cases as this that the failure to

study the case carefully has caused removal of suspected foci and brought the theory of focal infection into disrepute.

CASE 2.

Mr. C. C. S. This patient was 50 years of age and complained of pain in the shoulders and arm for a few weeks. Previous history had no bearing on the present complaints, and physical examination revealed normal findings except for a limitation of motion of the right arm and shoulders, and sensitivity to pressure over the branches of the cervical plexus. The above plan of study was adhered to with the following findings: blood count, basal metabolic rate and stool examination were all normal; the sedimentation rate was increased. Cultures from the nasopharynx, prostate, and stool were made. Streptococci of the green producing variety were isolated from the tonsils and nasopharynx which did not agglutinate with the patient's serum. However, using the electrophoresis method,[6] potential determinations with the patient's serum showed antibodies in 1-3200 dilution with streptococci from arthritic joints of rabbits. There was an x-ray negative, devitalized tooth which was removed and found to have a small abscess at the apex. All symptoms disappeared in two weeks and have not recurred after a period of eight years.

Case 2 represents a patient in which an obscure focus of infection was present. On account of the persistance of symptoms, and after eliminating all other possibilities as to the etiology, the devitalized tooth was removed. Despite the fact that the tooth was x-ray negative, upon extraction a small abscess was found at the root. The patient's symptoms disappeared in two weeks.

CASE 3.

T. B. F. This patient was a male of 54 years of age, whose symptoms were fatigue, pain in the left shoulder, knees, ankles, and muscles of the thighs for two months with a gradual onset. There was nothing in his history to indicate the cause of his trouble. The physical examination was negative except for some limitation of motion of the left shoulder. Pain was elicited when other involved joints were moved passively. When the laboratory work referred to above was carried out completely, all findings were normal except for the presence of a mild secondary anemia. The hemoglobin was 62 (Dare), red blood count 3,500,000, the white blood count 6,000. The patient was placed on ferrous sulfate, fifteen grains, three times daily, and vitamin concentrate. He improved gradually and was free from symptoms in about two months. There have been no recurrences in a period of two years, but he continues to take iron at periodic intervals.

Case 3 represents a case in which the treatment was simple but might have been unnecessarily complicated. No vaccines or foreign proteins were given, nor were large doses of salicylates, etc. The treatment was based entirely on correcting the anemia which was the only abnormal laboratory finding. It has been pointed out that poor blood supply and circulation to the joints are important factors in arthritis. In the presence of anemia, the hemoglobin supply is reduced which decreases the oxygen supply to the affected parts, and waste products accumulate. Correcting these physiological factors is all that was necessary in this case.

CASE 4.

Mrs. L. This case is that of a woman 42 years of age, who complained of pain and stiffness of fingers and knees for two to four months, which was worse on arising. The history gave no clue as the cause of her trouble. The physical examination was negative except for a slight crepitation of the knee joints. The laboratory findings as outlined above were within normal limits. It was suspected that her arthritis was partly due to a low metabolism, although the BMR was minus 5%. She was given one half grain thyroid extract a day for one month with no improvement. This was increased to one grain and she became quite nervous, lost weight, and her pulse rate was definitely accelerated, but her original symptoms did not improve. She was then put on injections of estrogenic substance, 5,000 units twice a week. The rheumatic and menopausal symptoms did not return.

This again illustrates the important role played by changed physiological factors. The laboratory results and physical findings were all negative in this case, unless a BMR of minus 5% is considered significant. This type of case has been emphasized by Francis Hall of Boston.[4]

CASE 5.

M. A. A. A girl 18 years old who complained of pain and swelling of both knees, especially the right for about six months, which came on gradually. Nine months previously she had moved to a mountainous community in the West. She spent a great deal of time in mountain climbing and horseback riding. Three months after this program of intense activity, she began to have pain and swelling of the knee joints. The patient had been advised to have a nasal operation on account of mild nasal symptoms. However, in studying the history carefully, it was found that the onset followed horseback riding in the mountains after she had jumped off the horse on rocky soil several times. A diagnosis of traumatic arthritis was made, but the joint cavity was not aspirated since

it had been several months since the onset. Due to the fact that the history, physical and laboratory findings pointed toward trauma as the sole etiological agent, she was treated accordingly. The program consisted of bed rest, heat, and later graduated exercises had been resumed, and she is free of symptoms.

The case above is one of uncomplicated traumatic arthritis. This illustrates a type of arthritis due to mechanical injury which responded to rest and prevention of further trauma. A nasal operation to eradicate a suspected focus of infection would have been a serious mistake.

CASE 6.

Mrs. J. H. A young married woman aged 24 was seen three years ago complaining of swollen, painful finger joints, elbows, knees and ankles. The onset followed a few months after the birth of her first child. There was a history of attacks of tonsillitis as a child and frequent sore throats since then. The tonsils were incompletely removed five years previously. Except for the attacks of tonsillitis, the patient had been well until the onset of arthritis six months previously. She had married two years before against her mother's advice, and there was considerable conflict between the two families. She and her husband were living with her parents and the patient was quite unhappy. Physical examination revealed the presence of swollen red joints as above mentioned, considerable pain with passive motion, and marked limitation. Other abnormal findings were large infected tonsil remants and teeth showing a considerable amount of dental repair; there was a systolic murmur at the base of the heart with no enlargement. The laboratory findings were negative except for a rapid sedimentation rate, mild secondary anemia, two abscessed teeth and a practically pure culture of streptococcus viridans from the tonsils. These clultures were examined by the electrophoresis method of Jensen and Rosenow[6] and fell into their "arthrotropic" group. The infected teeth and tonsils were removed with some apparent improvement. She was given vitamin concentrate and large doses of iron and a diet low in calories and high in vitamines as advised by Pemberton.[7] After three months when her improvement had apparently become stationary with the above treatment, she was given 15 intradermal injections of a bacterial filtrate prepared from streptococcus viridans isolated from the tonsils. She had a slight exacerbation of symptoms after each injection. She seemed to start improving again after the administration of the filtrate. During the entire course there were certain exacerbations which were difficult to explain on the basis of the physical findings. She still has attacks of red, swollen, painful joints which we have been unable to prevent.

It should be mentioned that this patient was emotionally unstable but very cooperative. In attempting to determine factors responsible for the exacerbations, it was observed that they usually followed emotional upsets. It was known that there was considerable conflict in her home life due to the fact that her mother and mother-in-law did not agree regarding the care of her child during her illness. It was observed further that her flare-ups followed altercations. During this time the patient was upset, cried easily and could not sleep. This was followed by red swollen joints.

This type of case probably illustrates what Pemberton[2] has emphasized in regard to the condition of the capillary bed in cases of arthritis. Emotional disturbances result in constriction of the capillaries, and therefore, in the interference of the blood flow. Such interference of the blood flow leads to disturbance in the nutrition of joints as pointed out earlier.

III. NEW METHODS OF INVESTIGATION IN CONNECTION WITH RHEUMATIC CASES

The usual laboratory procedures which have been used in studying rheumatic cases such as we have shown in the preceding report are inadequate in many cases. There are many unsolved problems that need further investigation. We have been impressed by the evidence for and against the use of vaccines, foreign proteins, filtrates, etc., in cases suspected of having an infectious origin. In this connection skin tests have been made with filtrates and vaccines by many workers in an attempt to determine if this type of therapy was indicated,[8] and conflicting results have been reported. It seemed reasonable that the intensity of the skin test might vary with the amount of total protein present in the substance which is used as an antigen. Therefore, the protein constituents of the antigen used as an indicator should be determined. Such total nitrogen estimations have been made for some time by allergists in standardizing pollen extracts for intradermal tests and treatment.

After investigating the problem it was immediately evident that such preparations have often been used without regard to the amount of total protein present in them. With this in mind and with the help of Dr. Freeland of the Presbyterian Hospital of Chicago, a mikrokjeldahl method was devised for determining the nitrogen content of different batches of media being used for filtrate preparation. We found the results varied widely as is shown in the following tables.

TABLE I
RESULTS OF CHEMICAL DETERMINATIONS
(Expressed in mg. per 100 c. c.)
ANALYSIS OF SPECIMENS OF MEDIA MADE AT DIFFERENT TIMES ACCORDING TO THE SAME SPECIFICATONS

	Total Nitrogen	N.P.N.	Protein Nitrogen
STANDARD BRAIN BROTH			
Medium "A" unfiltered	253	47	205
Medium "A" filtered	239	48	191
Medium "B" unfiltered	158	100	58
Medium "B" filtered	141	128	13
STANDARD MEAT INFUSION BROTH			
Medium "C" unfiltered	702	200	502
Medium "C" filtered	500	216	284
Medium "D" unfiltered	264	116	148
Medium "D" filtered	245	126	119

DISCUSSION OF TABLE I

I. a. Different samples of standard brain broth prepared in the usual manner varied widely in total nitrogen content. For example in medias "A" and "B", the total nitrogen content before filtration was 253 mg. per 100 c.c. in "A" and 158 mg. per 100 c.c. in "B". (These medias were prepared in the same laboratory under the same conditions).

b. Different samples of standard meat infusion broth prepared in the usual manner varied widely in total nitrogen content. For example in medias "C" and "D", the total nitrogen content before filtration was 702 mg. per 100 c.c. in "C" and 264 mg. per 100 c.c. in "D". (These medias were prepared in the same laboratory under the same conditions).

TABLE II
RESULTS OF CHEMICAL DETERMINATIONS
(Expresed in mg. per 100 c.c.)
COMPARISON OF RESULTS OF ANALYSES OF DIFFERENT SPECIMENS OF MEDIA WITH THE CORRESPONDING BACTERIAL FILTRATES

	Total Nitrogen	N.P.N.	Protein Nitrogen
MEDIA "A"			
Filtered broth before inoculation	239	48	191
Filtrate strep vir No. 1	239	59	180
Filtrate hem staph alb No. 1	260	61	199
Filtrate hem staph alb No. 2	139.08	85.01	54.07
Filtrate strep vir No. 2	121.03	101.06	19.97
MEDIA "B"			
Filtered broth before inoculation	141	128	13
Filtrate strep vir No. 3	131	69	62
Filtrate hem staph alb No. 4	197	166	33
MEDIA "C"			
Filtered broth before inoculation	500	216	284
Filtrate strep vir No. 3	309	267	42
Filtrate strep vir No. 5	384	210	174
MEDIA "D"			
Filtered broth before inoculation	245	126	119
Filtrate strep vir No. 6	344	59	285

DISCUSSION OF TABLE II

1. The total nitrogen in the filtrates prepared from samples "A,B,C,D" varied widely from that of their respective media.

2. The filtrates prepared from the meat infusion broth showed a total nitrogen about twice as high when brain broth was used.

3. Filtrates of different organisms using media from the same sample varied widely in total nitrogen content. (The reason for this is being investigated further). Skin tests may vary widely according to the nitrogen content. This fact should be corrected before considering the specific reactions of different antigens.

4. Filtrates of different types of organisms varied in total nitrogen content when the same media was used.

TABLE III

(Chemistry readings expressed in mg. per 100 c.c.)

T.N.—Total Nitrogen
N.P.N.—Non-Protein Nitrogen
P.N.—Protein Nitrogen

Organism isolated	Source	Media used	T.N.	N.P.N.	P.N.	Skin Test
						Dose .1 c.c.
		MEDIA "A"				
		Brain Broth unfiltered	253	47	205	
		Brain Broth filtered	239	48	191	
Case B						Local Reaction
strep vir	nph	Media "A" as above	143	126	17	+ reddening size of a dime
Case B (above)						Local Reaction
hem staph alb	nph	Media "A" as above	167	79	98	+++ reddening 1 inch across
Case G						Local Reaction
strep vir	nph	Media "A" as above	197	74	123	+++ reddening size of a quarter immediately
Case S_1						Local Reaction
strep vir	nph	Media "A" as above	159	108.01	50.09	+ pale red ¼ inch across
Case S_1 (above)						Local Reaction
hem staph alb	nph	Media "A" as above	182.01	71.04	110.97	+++ reddening ¾ of an inch
Case S_2						Local Reaction
strep vir	nph	Media "A" as above	147.06	62.09	84.97	Negative
Case S_3						Local Reaction
strep vir	nph	Media "A" as above	159.02	75.47	83.55	Negative
Case P						Local Reaction
strep vir	nph	Media "A" as above	144	29	115	Negative
Case P (above)						Local Reaction
hem staph alb	nph	Media "A" as above	239	86	153	Negative
Case F						Local Reaction
strep vir	antrum drainage	Media "A" as above	101	64	37	++ arm red and sore
		MEDIA "B"				
		Brain Broth unfiltered	158	100	58	
		Brain Broth filtered	141	128	13	
Case Q						Local Reaction
hem staph alb	nph	Media "B" as above	197	166	31	+ reddening size of a dime, arm sore.

In Table III we have shown the results of a small number of skin tests in relation to the nitrogen content of the corresponding autogenous filtrates. It was found that the total nitrogen of the filtrates varied even when the same media and organism were used. The local reactions seem to vary with the nitrogen content of the filtrates from the streptococci and staphylococci, and is being studied further. These results tend to show some of the reasons why skin tests have been said to be of questionable value. However, skin tests may be of more value if the media is standardized by determining the total nitrogen content in both the original media and filtrates, the complete results of which will be reported in a subsequent paper when more extracts have been tested on large groups of people for individual variation.

Since the work of Frank Billings[3] on focal infection, certain types of bacteria have been felt to play a prominent role in many cases of rheumatism. Cultures taken from 400 to 500 patients suffering from some form of rheumatism have been shown to be streptococcus viridans more often than any other organism. Because of that, we are making studies in order to determine whether different strains of the green producing streptococcus vary in the antigenic substance present. Animal inoculations are being made with washed, killed bacteria, filtrate, alcohol-ether filtrate precipitate, and extracts from broken down washed bacteria. The results of the animal inoculations, methods and procedures will be discussed in a subsequent paper.

IV DISCUSSION

Rheumatism is a chronic debilitating disease characterized by remissions and exacerbations, but we want to point out in many instances that the prognosis is good. It is a disease involving many factors each of which must be weighed with equal consideration. It is being looked upon more and more as one obviously connected with a disturbed physiology[9]. Therefore, we must look for disturbances in the metabolic rate, blood chemistry, hematopoietic system, menapausal complications, and evidence of focal infection, trauma, and the reaction of the capillary bed to the emotional status of the patient. It is the exceptional case that results from one causative factor, more often it is a combination of several.

Rheumatism is a disease requiring patience and cooperation on the part of both the patient and the attending physician. The patient should be informed concerning its chronicity and the length of treatment. Since it is often a long drawn-out and painful illness, it is quite important to keep the patient in as good mental state as possible. If this is done there will be less detrimental effect on the affected joints.

The most difficult tasks in treatment of rheumatism are convincing the patient of its chronicity, the fact that it is something that he may have to live with to some extent the remainder of his life, and at the same time have him keep a good mental attitude. The physician has little trouble in getting a patient with coronary disease to curtail his activities or keep up proper treatment. In just the same manner a patient with arthritis must adhere to his program if he is to be benefited. Case I is an example of the difficulties a patient encounters when he fails to follow prescribed treatment. His affliction is obviously one that requires strict observance of his program. The patient must be treated as an individual and not as just another patient. The physician must seek and give cooperation at every point, as handling a case of rheumatism is often quite as trying on the doctor as the patient.

V. SUMMARY

1. A practical method of handling a patient with rheumatism has been suggested based on a study of 500 cases over a period of ten years.

2. New methods of investigation have been mentioned briefly, and research is being carried out on the chemistry of bacterial extracts to show why skin tests are unreliable in cases where infection is considered the etiologic factor.

3. Standardization of the media is highly important if a bacterial filtrate is to be used for skin tests to determine hypersensitivity. Our results already indicate that the type of medium used bears a definite relationship to the skin tests.

4. Chemical and immunological studies are being done to see whether different strains of green producing streptococci isolated from cases of rheumatism vary in antigenic properties.

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THE BAREFOOT BOY OF 1941

"Blessings on thee, little man,
Barefoot boy with cheeks of tan!
Trudging down a dusty lane
With no thought of future pain;
You're our one and only bet
To absorb the national debt.

"Little man with cares so few,
We've a lot of faith in you;
Guard each merry whistled tune,
You are apt to need it soon.
Have your fun now while you can;
You may be a barefoot man!"

—Author Unknown.

PHYSIOLOGICAL PROBLEMS IN SUCTION DRAINAGE OF THE GASTRO-INTESTINAL TRACT

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Suction drainage for obstruction of the gastro-intestinal tract is an indispensable adjunct to surgical treatment. It copes with perhaps the gravest features of g.i. obstruction, distention and the vicious chain of events initiated by distention. Other aspects of the pathologic physiology of g.i. obstruction, however, are not corrected by suction drainage, or at best are only indirectly altered. These other processes of g.i. activity which become pathologic during obstruction and remain so during the period of drainage are the functions of digestion, absorption, and secretion. With surgical lesions of the g.i. tract prolonged suction drainage is often indicated and may of necessity be continued for many days or weeks until the tendency to distention is overcome. In these cases suction drainage, while preventing distention, may add to the marked depletion of water, minerals, and nutritive elements that occurs with prolonged gastro-intestinal dysfunction. During the period of constant suction drainage physiological functioning of the digestive tract is minimal. Furthermore, a patient with a tube aspirating stomach and intestinal contents more or less constantly is in the same predicament from the physiological point of view as the patient with pernicious vomiting or with an intestinal fistula. The physiologic management, therefore, is similar to that of persistent vomiting or fistula.

The pathologic physiology of gastro-intestinal obstruction is illustrated in Table I. This table also indicates how attacking distention by suction drainage disrupts one vicious sequence of events but does not directly correct the other.

The physiological management of suction drainage, therefore, involves three considerations as indicated in Table I; viz., 1. water balance, 2. mineral or electrolyte balance, 3. nutritional balance. These problems are all closely related to one another, but for purposes of management it is simpler to consider them individually.

Read before the Section on Surgery, 101st Annual Meeting, Illinois State Medical Society, May 22, 1941, Chicago.

The methods we have used at St. Luke's Hospital for evaluating and treating these three problems of physiological balance are simple enough to be applicable in daily hospital work and have proven to be accurate enough to be effective.

TABLE 1. PATHOLOGIC PHYSIOLOGY OF GASTRO-INTESTINAL OBSTRUCTIONS

LUMENAL STASIS	
↓	
EFFUSION	
⇅	
DISTENTION (METEORISM)	A. GASTRIC DILATATION B. ILEUS (MECHANICAL OR PARALYTIC)
↓	
VASCULAR STASIS	
↓	
GANGRENE	
↓	
PERITONITIS	

IMPAIRED INTAKE (ABSORPTION)	ACTUAL LOSS (SECRETION)
	WATER
	MINERALS & ELECTROLYTES
	NUTRITIVE ELEMENTS A. CALORIC B. PROTEIN C. VITAMIN

The processes in the column at the left are interrupted by suction drainage, while those on the right of the line are not.

Water Balance: The pathologic physiology of dehydration as described by Marriott is outlined in Table II emphasizing the surgical importance of preventing severe dehydration or anhydremia.

TABLE II. DEHYDRATION

MILD DEHYDRATION DEPRIVES TISSUES OF WATER (MUSCLES, SKIN, ETC.) SEVERE DEHYDRATION DEPRIVES BLOOD OF WATER, LEADS TO ANHYDREMIA OR DESICCATION

BLOOD CHANGES	CLINICAL EFFECTS
A. Physical State	A. Impaired Circulation
Decreased Volume	1. Cardiac Inefficiency
Decreased 0^2 Capacity	2. Periph. Vasoconstr.
Increased Viscosity	B. Pulmonary Stasis
Increased Sp. Gr.	C. Peripheral Stasis
Increased Osm. Pr.	D. Functional and Metabolic Disturbances
B. Composition	1. Heat Regulation
Destruction of Red Cells	2. Renal
Net Loss of Serum Protein	a. Oliguria
	b. Albuminuria (Protein Loss)
	3. Cardiac

The clinical manifestations of anhydremia should be watched for or better prevented since they lead to many grave complications. Fundamental to the maintenance of water balance are the serum protein level and the sodium ion concentration. In addition to fluid intake and output these two factors must always be evaluated, especially when it becomes evident from a study of the fluid balance sheet that water balance is not being maintained in spite of apparently adequate fluid intake and output.

The Fluid Balance Sheet used is shown in Table III. This sheet is inserted on the hospital record and kept accurately.

TABLE III. FLUID BALANCE SHEET

DATE	INTAKE		
	Mouth/ Tube	Parenteral	Total
			+
	OUTPUT		BALANCE
Bottle	Urine	Total	
Drainage	Vol.	Sp. Gr.	
	800 to 1500 (MIN.)	1.015 (MAX.)	— +1000 (MIN.)

Daily recording on this sheet of the entire measurable intake and output are made. The 24 hour urine specimen is examined for volume and specific gravity. The + and — signs are merely used here to indicate an algebraic difference between the totals which would show a + or — balance. The balance of course should be +.

Daily observation of this sheet reveals at a glance the water balance of the patient and also indicates the approximate amount of fluid needed during the following 24 hours. As Coller and Maddock have pointed out urinary volume and specific gravity are the best clinical indexes of water balance. We believe that if the average patient's 24 hour urinary output is 800 cc. or more there is no serious dehydration. A good water balance is also indicated by a 24 hour specific gravity below 1.015. In patients with renal disease, however, the urinary output may be high and dilute even though the patient is dehydrated. On the fluid balance sheet the maximum or minimum figures compatible with a good water balance are indicated in parentheses. These figures have been arrived at by observing ordinary surgical patients well on the way to convalescence. We believe that they represent the average for hospital patients who are not suffering from dehydration. The +1000 cc. in the balance column represents the minimum daily difference between the measurable intake and measurable output and is the amount of fluid loss that cannot be measured in ordinary hospital routine. This 1000 cc. would include losses in perspiration, respiration, feces, etc. and also deficits taken up and retained by the body. It will obviously vary widely but under ordinary conditions it should average not less than +1000 cc. daily. By simply following the routine of accurately recording in each column on this fluid balance sheet the measured volumes or specific gravities and making a daily balance we can see where the patient stands. The following day's balance can then be regulated by increasing or decreasing the fluid intake. In most cases this simple method is quite effective if we strive for three things: a daily urinary output of 800 cc. minimum, a 24 hour specific gravity of not more than 1.015 and a positive balance of 1000 cc. or more daily.

In some cases, however, we find we are unable to maintain these three conditions in spite of the amounts or kinds of fluids given the patient. The fluid balance sheet may show a low 24 hour output, or a high specific gravity, a negative balance (i.e. less than 1000 cc.), or an excessively positive balance, which might indicate edema. The factors that must then be taken into consideration are listed in Table IV. Routine tests and treatment of these conditions are also indicated. In the presence of an adequate supply of fluid the body cannot completely restore normal water balance in cases with renal disease, serum protein deficiency, or with inadequate sodium intake. On the other hand forcing fluids may cause edema in the presence of

TABLE IV. FOR FLUID BALANCE BELOW MINIMUM CONSIDER:

A. Renal Disease: Impaired concentrating power; large volume, dilute urine; then low sp. gr. is not an index of good water balance. Normal kidneys can excrete 45 gm. urea plus 15 gm. NACL/liter of urine. Diseased kidneys require more water. Check blood chem. for N retention.

B. Serum Protein Deficiency: Low O.P. of blood; normal water balance impossible; forcing fluids produces edema. Blood chem. for serum prot.; plasma transfusion.

C. Inadequate NACL

Avoid Edema. Causes: 1. Cardiac disease: Rapid administration of fluids; excessive NACL; excessive fluids; IV rate not more than 60 drops per minute.

2. Renal disease: excessive NACL.

3. Serum protein deficiency.

Laboratory Aids: NPN; serum protein; CL; CO_2.

For Abnormal Chemistry: Transfusion.

cardiac or renal disease or if sodium chloride is given in excess. Blood chemistry studies are helpful in evaluating renal or serum protein factors and blood chloride levels. Treatment of such patients with blood or plasma transfusions will provide a more normal chemistry for the restoration of water balance.

Mineral or Electrolyte Balance: For clinical purposes and for simplicity we need only consider the sodium and chloride ion factors, since sodium chloride is the principal salt lost in constant suction drainage. With equivalent losses of Na and Cl, replacement with NaCl would restore the losses, and a study of blood chloride levels would indicate the amount of NaCl needed. These losses however are not always equivalent, and it is necessary to study the alkali reserve or CO_2 combining power in addition, to determine whether the acid-base balance is disturbed. The use of the Miller-Abbott tube for drainage has a variable effect on acid-base balance depending on the level of obstruction or aspiration. This is indicated in Table V. With drainage from the stomach the

TABLE V. MINERAL BALANCE

1. Osmotic pressure of tissue fluids and ability of body to retain water depends on NA.
2. Acid-base balance depends principally on relative amounts of NA and CL.
3. Mineral balance depends on type and amount of mineral loss and replacement, and on level of loss from G.I. tract.

Clinical Electrolyte Balance

G.I. Level	Type of Loss	Result	Therapy
Stomach	Acid (CL)> Base (NA)	Alkalosis Blood CL Decr. Blood CO_2 Incr.	Saline, Ringer's. HCL, NH_4CL, Gastroenterostomy, Jejunostomy.
Duodenum	Variable	Variable Blood CL Decr. Blood CO_2 Decr.	Saline, Ringer's, HCL, Lactose, Sod. Bicarb. Glucose
Jejunum	Acid or Base Base	Parallel Decr. In CL and CO	"
Ileum	Base> Acid	Acidosis. CO_2 Decr. CL Decr.	Saline, Ringer's, Glucose, Lactate, Sod. Bicarb.

Cl loss is greater than the Na loss and alkalosis results. The blood studies show a low Cl and a high CO_2. The treatment indicated is to replace NaCl and at the same time to overcome alkalosis. This may require gastro-enterostomy, or jejuostomy for feeding, in case of pyloric obstruction or in case of closure of a gastro-enterostomy stoma. In the case of drainage from the ileum the Na loss is greater than the acid loss and acidosis results. The problem then is to replace NaCl and combat the acidosis. For drainage between the stomach and ileum the relative losses of Na and Cl are variable and a study of the blood chlorides and alkali reserve indicates the electrolyte balance and the type of therapy necessary. The treatment of the acidosis or alkalosis in these cases is often difficult because of impaired absorption from the gastro-intestinal tract and because of the limitations of giving acid or base parenterally. Progressing alkalosis is more difficult to treat than acidosis, but in either case blood or plasma transfusion will help to restore normal acid-base balance.

Another physiological consideration of prime importance in patients requiring constant suction drainage in nutrition. These patients are often in a serious state of malnutrition because of long standing g.i. tract disease before they are subjected to surgical treatment and constant suction drainage. During a period of prolonged drainage even the acute case may develop signs of nutritional deficiency. The causes, results, and complications of nutritional disturbance are outlined in Table VI and the clinical signs and

TABLE VI. NUTRITIONAL DISTURBANCES

Duration of Symptoms: Obstruction, vomiting, anorexia, malnutrition, cachexia, sepsis
Operative Blood Loss and Trauma
Duration of Postoperative G.I. Inactivity
Results:
- Depletion of carbohydrate, fat, protein stores
- Lowered serum protein and potential edema
- Avitaminosis
- Anemia
- Cardiorenal impairment
- Lowered General resistance

Complications: Pulmonary, cardiac, peritoneal, renal.
- Impaired wound healing: Infection; disruptions of G.I. tract and abdominal wall

treatment in Table VII. The need for parenteral protein administration in these patients is great. Blood transfusion has heretofore been the only safe way to give protein but recent work

TABLE VII. NUTRITIONAL DISTURBANCES

Clinical Picture:
- Emaciation
- Skin wrinkled, colorless, loss of elasticity
- Tongue dry, red, beefy
- Mental apathy or irritability
- Laboratory findings

Treatment:
- Best possible preoperative preparation
 1. Gastro-intestinal decompression
 2. Food, liquid, minerals, vitamins by mouth when possible
- Transfusion
- Parenteral glucose, salts, vitamins, (aminoacids?)
- Careful postoperative study and management

with parenteral amino acids and preparations of casein may prove to be of value in these patients.

Summary and conclusions.

1. The patient requiring constant suction drainage of the gastro-intestinal tract presents a complex physiological problem.

2. Drainage relieves distention and indirectly improves g.i. function but has no immediate beneficial effect on water balance, electrolyte balance, or nutrition.

3. When prolonged, drainage aggravates the patient's depletion.

4. A simple method of evaluating water and electrolyte balance and nutritional deficiency is outlined.

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THE FAVORABLE PROGNOSIS OF CORONARY DISEASE

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In various organs of the body it is not uncommon to note disease of considerable extent with neither impairment of function nor pain. It is well recognized that this observation may apply also to the coronary arteries, and the evidence appears to be conclusive that in certain individuals extensive coronary sclerosis may exist over a long period of time with few clinical manifestations. It is not, however, to such silent cases of coronary disease that attention here is directed, but to cases exhibiting symptoms of various intensity in which the patient may engage in satisfactory activity over many years of useful life.

There is no new conception, but it is one that deserves to be emphasized. Coronary disease is indeed a grave matter; and its gravity has been so well appreciated both by physician and by patient, that in many instances we have failed to give due weight to considerations that may lessen the seriousness of its import. This applies both to cases with angina of effort and to those with coronary thrombosis, and to cases with the Adams-Stokes Syndrome as well. In disease of the coronary arteries, as in many other diseases, recognition first was given only to the more severe cases, and it was around the manifestations of such cases that medical thought was moulded. In view of subsequent knowledge it now appears that this early emphasis on its serious aspects has persisted too exclusively of other considerations.

Read before North Shore Branch Chicago Medical Society, January 7, 1941.

It was on July 21, 1768, before the Royal College of Physicians, that William Heberden read a paper in which he proposed the name by which angina of effort since has been known, and in which he gave a comprehensive description of the syndrome. At that time he called particular attention to the *likelihood of sudden death.*

"There is a disorder, of the breast, marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, of which I do not recollect any mention among medical authors. The seat of it, and sense of strangling and anxiety with which it is attended, may make it not improperly be called Angina Pectoris. . . .

"When I first took notice of this distemper and could find no satisfaction from books, I consulted an able physician of long experience, who told me that he had known several ill of it, and that all of them had died suddenly. This observation I have reason to think is generally true of such patients, having known six of those, for whom I had veen consulted, die in this manner. . . .

. . . . "What the particular mischief is, which is referred to these different parts of the sternum, it is not easy to guess, and I have had no opportunity of knowing with certainty."

For many years various theories regarding the etiology of this "particular mischief" were in vogue; anaemia of the heart muscle, stretching of the outer coat of the supracardiac aorta, and exhaustion of the myocardium, each claiming notable advocates. It remained for Keefer and Resnik in 1928 with conspicuous clarity to present comprehensive evidence for the view, now generally accepted, that angina pectoris results from insufficient circulation in heart muscle — whether it be due solely to anoxaemia, as they believed, or to some other result of ischaemia, local or general.

Like Heberden, Keefer and Resnik stressed the likelihood of sudden death, making it an integral feature of their conception of angina, and emphasizing the importance of so regarding it. It was necessary in diagnosis that they do this, so as to establish the true nature of the syndrome and thus emphatically to relate it

surely to the circulation of the myocardium. That done, however, it would appear now equally important to stress the other fact; namely that sudden death, while its possibility is inherent, need not invariably occur, and that inherent also in many cases is the possibility of improvement.

The same emphasis exclusively on its more serious aspects at first applied also to our conception of coronary thrombosis. Before Herrick's publication it was generally believed that occlusion of a coronary artery regularly was suddenly fatal. As early as 1912 that master physician said:

"But there are reasons for believing that even large branches of the coronary arteries may be occluded — at times acutely occluded — without resulting death, at least without death in the immediate future." Herrick reported such cases and called attention to the possibility that certain slight anginal attacks may be due to obstruction of small coronary twigs. It was only after some years, however, that in ante-mortem diagnosis physicians generally began to consider the possibility of coronary occlusion. By those who finally began to report series of cases, the immediate mortality ordinarily was estimated at about 50 per cent; but with the common recognition of the syndrome, subsequent years have witnessed a progressive lowering of this figure until at present it is put at about 15 per cent. With regard to ultimate prognosis, however, pessimism still dominates the outlook. In spite of the fact that there is a steady increase in the number of cases of long survival that are reported and that are observed by physicians everywhere, the mind of the patient and the attitude of the doctor appear still to be influenced too exclusively by the time-honored gloomy aspects of the situation.

Much of the vast increase in our knowledge of the coronary circulation and of the factors which modify it tends now to lessen the darkness which has enshrouded the future of patients with symptoms of coronary disturbance. Not only is the rich anastamosis throughout much of the coronary tree now appreciated, but it is known also that in older years anastamosis tends to increase, a tendency through which nature appears to provide for relief of some of the impairments, temporary or more permanent, that might be expected to occur.

It is well known that in many instances the area of infarction may be quite small. Admitting that at least in most cases coronary thrombosis implies sclerosis, it must also be admitted that the event may occur in a more or less isolated spot in the arterial tree, and thus carry little implication of wide spread involvement. Such instances may constitute true examples of what many of us, often with more precision than understanding, sometimes term "coronary accidents." Indeed it appears that upon occasion thrombosis in a coronary artery may be the result of a combination of circumstances as truly accidental and carrying no more implication of repetition than many of the other accidental happenings that may cause injury to various parts of the body.

Regarding the very etiology of coronary sclerosis there are many unanswered questions. In view of the fact emphasized by Allbutt, Brooks, and others, and to which attention recently was called again by Gilbert, that in older individuals some degree of coronary sclerosis almost invariably is present, it must be questioned indeed whether in all instances we are justified in regarding coronary change as other than the aging process to which all flesh is heir. Whether or not upon occasion it may be that some special causative factor ceases to operate, it appears unquestionable that not infrequently sclerosis, like so many other chronic processes, may progress only with extreme slowness, if indeed it does not become stationary. Frequent reference has been made to the fact above noted that there is no necessary parallel between the degree of coronary involvement and the severity of symptoms. Widespread involvement may exist with few clinical evidences, while severe symptoms of coronary insufficiency may occur in an individual with no evidence of change in his coronary arteries greater than might be expected at his age.

Although there is general agreement that angina is produced by temporary insufficiency of the coronary circulation, there is still much question, at least in many cases, as to the precise mechanism by which this insufficiency is produced. Is it due to a contraction of the coronary bed, brought about by arterial constriction, (or by increase in the tone of heart muscle as suggested by Libman and others)? Or is the insufficiency merely relative, a failure of the vessel

to dilate upon increase in demand for blood? May both factors operate? Is the insufficiency, whatever its mechanism, general or local? Granting that in most instances the inability of sclerosed coronaries to undergo physiologic dilatation may in itself be enough adequately to explain the attack, may it not be also that in certain cases coronary spasm does occur? An increasing amount of evidence suggests that it does. If the vessels can undergo active constriction may not this take place in a patient whose coronaries are altogether normal? And while admittedly spasm itself, if it occurs, might well be an event of great danger, yet in some cases might it not be attended by danger of lesser degree? Might not the degree of risk be considerably less in the presence of a normal myocardium than in myocardial disease?

If spasm occurs, there is much evidence that on occasion it may be of reflex origin. Might not there be a cessation of those factors which initiate such reflex coronary spasm? If in spite of increasing evidence, one declines to admit the possibility of spasm as a cause of angina, and insists that in all cases the circulatory insufficiency is relative, it must nevertheless be admitted that the extent of muscle area insufficiently supplied with blood is a matter of uncertainty. In some instances may not the affected area be quite small, the result of local variation in arterial involvement? In view of the fact, now well known, that development of collateral circulation may be considerable, may it not be that the responsible area ultimately becomes better supplied with blood and consequently less liable to suffer, even relatively, from insufficiency?

It appears that coronary thrombosis is not invariably attended by infarction, but that upon occasion collateral circulation restores the ischaemic area before infarction develops. If coronary spasm be admitted, may it not be that, in some instances of clinical thrombosis, local spasm itself causes ischaemia with or without the development of thrombosis or of infarction, and with no great implication of extensive vascular disease?

In the symptom complexes associated with derangement of the coronary circulation, so varied in localization and in character, little enough is known regarding the factors that determine the precise pattern in an individual case. Just what is the exact relationship between the abdominal and the more distinctly cardiac symptoms in certain cases of angina and of thrombosis? For a long time it has been assumed that in many patients with coronary insufficiency, gastro-intestinal symptoms may occur without abdominal disease but due entirely to the cardiac disorder. Much recent investigation emphasizes the probability that the reverse process occurs, and that gastro-intestinal reflexes may produce change in the coronary circulation productive of characteristic manifestations. The relationship of gall bladder disease to coronary symptoms still demands much thoughtful investigation. Admitting that in most clinical cases such reflex production of cardiac symptoms occurs only in the presence of coronary impairment, the question still arises whether in some instances the cardiac symptoms may not arise from abdominal disturbance without implication of coronary disease. Might not more attention to improvement of disorders below the diaphragms in some cases lessen the incidence of reflex coronary disturbances, whether undue sclerosis be present or not?

In the cases of certain patients with "high nervous and emotional tension" who experience symptoms referable to the viscera supplied by two large branches of the vagus, we may possibly have been trying to separate too distinctly their disorders and to treat too separately their complains. May it not be that in certain cases therapeutic measures directed toward better functioning of the autonomic nervous system will relieve some of these patients of their complaints without permanent impairment of heart or of gastro-intestinal viscera?

The very gaps in our understanding of the mechanism of production of coronary symptoms must themselves in many instances enhance the possibility of a happier outlook. For surely it is illogical to build confident prognosis upon diagnostic postulates whose bases are insecure.

Be the details of thrombosis, of angina, and of coronary sclerosis itself what they may, it is well known that in many patients evidences of coronary disorder imply little impairment of health and little curtailment of longevity. In many a man it is true that coronary occlusion causes death within a few moments or within a few days. But in many others it produces only a temporary episode of ill health of various length and severity, with no recurrence and with

clinical recovery complete. In some instances the patient does not cease his usual activities. Between these extremes occur cases of every gradation.

A similar classification applies to cases of angina of effort. In some the patient may be completely incapacitated, while in others the attacks may cease, at least for long intervals of time. In many instances the rate of progress may be quite slow, no faster than the average aging process. In many such cases the patient may reach approximately his expectancy, and do so with little added restriction of his usual occupation.

In the same address in which he called attention to the likelihood of sudden death inherent in angina, William Heberden in 1768 said also: "But though the natural tendency of this illness be to kill the patients suddenly, yet unless it have a power of preserving a person from all other ails, it will easily be believed, that some of those, who are afflicted with it, may die in a different manner, since this disorder will last, as I have known it more than once, near twenty years."

John Hunter himself lived twenty years with the disorder even though he appears to have achieved little success in avoiding the vexations that precipitated his attacks. While keeping in mind the more fearsome features in the prognosis of coronary disease, is it not time that we give positive attention also to its more favorable aspects?

All of us doubtless have observed many cases that illustrate the cessation or slow progress of coronary disturbances. A few examples are the following:

In 1931 a man 67 years old suffered a typical attack of coronary thrombosis with anterior infarction. After a period of inactivity he resumed his occupation, which involves a certain amount of walking. Although he has experienced angina pectoris at intervals of a few weeks or a few months, particularly on walking in the wind or up a slight incline, he has not had to discontinue his work or to lose time from it.

A physician with conspicuous hypertension began to have severe attacks of angina pectoris in 1937. The severity of the attacks lessened, but they increased in frequency, occurring several times a day. Gradually the frequency diminished until a short time ago he reported that he experienced only occasional attacks particularly on going out in the evening after dinner. Meantime he has not curtailed the extent of his practice, although he has modified somewhat the manner of it.

In 1936 a business man 67 years of age experienced severe anginal attacks with exertion and with emotional upsets; a few times in the night. Gradually the attacks diminished both in frequency and in severity, he reporting a year and a half later that he had "not had a real heart attack for over two months." After two more years he still had had no severe pain and had experienced only occasional discomfort. He continued to have very few anginal symptoms until his death of pneumonia in May 1940 at the age of 70.

A college professor of 62 had a coronary thrombosis in the spring of 1932. At the beginning of the fall term that year he began to carry his full schedule, and remained entirely free of symptoms until the fall of 1936. Then at infrequent intervals he began to experience mild anginal attacks upon activity too soon after eating, and for a time he complained of more or less continuous discomfort in the region of his left deltoid. His work has not been interrupted although he is still quite active in teaching.

In October 1925 a physician 49 years of age had occasional oppression in his chest on exertion. Three years previously he had had pain of two days duration in his left chest, at which time he was in bed for two days, it being six months before he felt quite well. In December 1925 he experienced a coronary thrombosis of moderate severity, but was away from work only a few weeks. After recovery he was free of symptoms for several years. Then he began to notice extra systoles, and later to experience chest pains at infrequent intervals. He is still actively engaged in practice although he may have an attack of pain upon emotional excitement or if he does much walking.

Four years ago a farmer 69 years of age had had frequent short dizzy spells over a period of several months. Once he had lost consciousness and had fallen. His electrocardiogram showed a complete A-V block with variation in the form of the ventricular complexes, and with conspicuous change in rate. The attacks became less frequent, and in the summer of 1939 he reported that he had had none "for a long time." A year later he still was free of attacks, but had considerable dependent oedema. A few days ago there was little if any oedema, and he reported no attacks of dizziness.

Some two years ago a business man 66 years old summoned his doctor at night because of severe chest pain. He questioned the doctor's diagnosis of coronary thrombosis and next morning went to his office as usual, stopping by the physician's office for an electrocardiogram. The record was typical of anterior infarction. Still unconvinced he continued to work, and three days later visited another doctor who noted a pericardial friction, obtained another electrocardiogram which showed the usual progressive pattern of infarction, and succeeded in persuading the patient to stay in bed a week or so before resuming his work. Although this man has continued his occupation and even worked on his lawn the past summer, he has had no subsequent cardiac symptoms.

Although it is well appreciated that such cases are by no means unusual, impressions moulded by a hundred and fifty years of fearful tradition are but slowly modified. Thousands of executives, salesmen, doctors, lawyers, government officials, ministers, business men, and teachers with various and varying symptoms of coronary insufficiency are doing their daily work. By greater or less modification of their accustomed regimes many of these men and women work as effectively as before the onset of symptoms, even if others are not so fortunate. Some die suddenly, some gradually lose effectiveness, others improve, and still others became symptom free. Shall we permit our attitude toward the patient to reflect the possibility of sudden death; or shall we just as correctly emphasize the possibility of long life with lessening pain? A large share of the worthwhile work of the world today is being done by those who have angina pectoris of greater or less degree and by individuals with an unquestioned history of coronary thrombosis. Careful attention to the attitude we show as well as to the specific directions we give, in many instances not only will enable them to do their work better and for longer years, but will also go far to lighten the cloud under which too many of them live. It may also lessen the tension and anxiety which in many cases are contributory to unhappy episodes. Just how great is the therapeutic value of cheerfulness perhaps can never precisely be determined. Our efforts in the therapy of body ills frequently must be misdirected, and our ignorance forgiven; but in the therapy of mental pain no excuse can be offered for failure to employ the one sure agent, cheerful optimism. Surely a large share of our art is occupied with the relief of suffering, and if sometimes events do not substantiate the hope we offer, on other occasion the passing years abundantly justify the cheerful outlook we have insistently maintained. Let us keep in mind the words with which Parkinson closed his address before the British Medical Association at its Centenary Meeting in 1932:

"Too much stress has been laid upon the gravity of angina pectoris. It is inseparable from a risk of sudden death, but this may be deferred for years. In attacks of coronary thrombosis and in the severer grades of angina of effort the pain is extreme and the danger is great, but milder forms are common and often run a tolerable course. There is every gradation between mild angina of effort and severe coronary thrombosis, as there is every grade of coronary disease. Too much attention has been centered on the anginal death, and too little on the anginal life and its management."

VITAMIN K IN HYPOPROTHROMBINEMIA

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Vitamin K deficiency is characterized by a depletion of plasma prothrombin which is intimately involved in the mechanism of blood clotting. A prothrombin deficiency may be the cause of excessive and dangerous bleeding in patients with hepatic or gastro-intestinal disease.

The mechanism of action of vitamin K is not known except that it is utilized by the liver in the formation of prothrombin. Experimental observations indicate that liver damage is responsible for the reduction of plasma prothrombin and that the liver is the chief, if not the only, source of prothrombin. There is very little storage of vitamin K and very little reserve of prothrombin in the body.

Clinically, liver damage may occur in various diseases. Any obstruction to the extra-biliary passages may secondarily cause liver damage. Primary liver disease through infections, neoplasms, metabolic or other factors may affect the liver to such an extent as to result in a lowered plasma prothrombin level.

Natural vitamin K is a fat soluble substance whose absorption depends upon the presence of bile salts in the intestinal tract. A good general diet apparently contains enough vitamin K to maintain a normal plasma prothrombin level.

Two synthetic compounds with vitamin K activity have been used successfully in patients with a hypoprothrombinemia. An oil soluble compound 2-methyl-1, 4-naphthoquinone was used orally and a water soluble compound 4-amino-2 methyl-1-naphthol hydrochloride was used parenterally. The prothrombin determinations were done by the Smith method, and recorded in percentage of normal clotting activity. Bleeding levels could occur at any level below 70 per cent.

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Presented before the Section on Surgery, 101st Annual Meeting, Illinois State Medical Society, May 22, 1941.

No correlation between the degree of jaundice or the duration of the jaundice and the plasma prothrombin level could be made of eighteen jaundiced patients with reduced plasma prothrombin. Five patients who had dangerously low levels did not have jaundice. Conversely, several severely jaundiced patients had normal prothrombin times. Thus one may assume that jaundice in itself is not a criterion for the determination of prothrombin levels. From these observations it appears that any patient suspected of liver damage with or without jaundice, and with or without bleeding, should have a prothrombin determination if one wishes to eliminate entirly the danger of hemorrhage.

Oral Administration. The initial oral dose used was 6 mg. of vitamin K and 2 Gm. of bile salts. As a routine, 5 grains of bile salts were given with every milligram of vitamin K. A daily dose of 1 to 3 mg. maintains a normal prothrombin level in most patients.

The following case illustrates the effect of the therapy:

Case M.R. presented a moderate degree of jaundice of four weeks' duration due to a common duct stone. Preoperatively, the prothrombin activity was 61 per cent. This patient was given 1 mg. of vitamin K three times daily, with 0.33 Gm. of bile salts to each milligram. After one dose the level in twenty-four hours was 74 per cent. In forty-eight hours after three doses the level reached 91 per cent. Such a gradual rise in the plasma prothrombin was obtained with small doses. The level dropped to 75 per cent in twenty-four hours. Then, an initial 6 mg. dose of vitamin K and 2 Gm. of bile salts were given. A rise to 95 per cent was then attained in one-half hour. Other patients responded similarly to these doses. There is no objection to the use of small doses of the compound when preparing a patient for surgery; however, if an immediate effect is sought, an initial large dose is recommended.

Vitamin K must be given with bile salts when the latter are not secreted into the intestinal tract. I found that in the absence of bile salts the response was negligible. This was illustrated by the case of A.K.; the patient gave a good response to an initial dose of 6 mg. of vitamin K with bile salts, rising from a 57 per cent level to 100 per cent. However, after the prothrombin time had dropped in twenty-four hours to 47 per cent, 6 mg. of the vitamin were given without bile salts, but there was no response. Then 1 mg. of the compound was given with 0.33 Gm. of bile salts, three times daily. After one dose, the level was 63 per cent. After four doses, the level was 100 per cent. Another patient, O.P., was treated for acute intestinal obstruction by Wangensteen gastric siphonage for seven days. A vitamin K deficiency was present due to starvation. It was assumed that bile salts were secreted into the intestinal tract. Three milligrams of vitamin K were given without bile salts. The duodenal tube was clamped off for two hours. The level rose from 79 to 91 per cent in twenty-four hours. The next day it dropped to 70 per cent. Six milligrams of vitamin K, without bile salts, were given and in one-half hour the level was 90 per cent. In twenty-four hours it was again 90 per cent, and in forty-eight hours it was 100 per cent. Thus, one is guided by the etiologic factor of the vitamin K deficiency as to whether or not bile salts should be given in conjunction with vitamin K.

The response to the synthetic vitamin K is apparently immediate. When an adequate dose was given, a rise in the prothrombin level was obtained within one hour. Five patients were observed to determine the rapidity of action of the compound. In the case of A.K., one hour after an initial large dose, the level rose from 57 to 100 per cent. In the case of M.R., a 75 per cent prothrombin activity increased to normal one-half hour after an initial 6 mg. dose. In three other cases there was a similar rise in one-half hour from 70 to 90 per cent, 66 to 80 per cent, and 74 to 90 per cent, respectively. Absorption of vitamin K is presumed to take place in the small intestine. The effect was so rapid that one might even suspect absorption from the stomach. Since the absorption was so fast, I gave the vitamin to several patients who were being treated by constant gastric siphonage. The vitamin K was given by mouth, the duodenal tube clamped off for an hour, and the prothrombin level determined. The response was good in all cases.

An attempt was made to determine the duration of the effect of a single dose of the vitamin. The rise in prothrombin activity following a

single dose was maintained in some cases for only twelve hours; in others, for three days; and in some it remained normal. Clinically the patients with severe liver damage did not maintain the prothrombin level as well as did those with relatively good liver function. Undoubtedly there were exceptions to this. With such a variation in the maintenance of the plasma prothrombin one can be assured that the level is kept within normal limits only by repeated prothrombin determinations. Maintenance doses of 1 mg. of the vitamin, three times daily, are recommended if one is unable to perform the test very often. In the case of M.R. it was seen that the preoperative level of 75 per cent was increased to 100 per cent by a single 6 mg. dose. There was no abnormal bleeding. Not until the eighth postoperative day did the level begin to drop. On the tenth day it had reached 55 per cent. At this point therapy, to which the patient responded immediately, was started. This patient maintained a normal level for eight days postoperatively after only a single initial large dose of the compound.

A normal prothrombin activity before surgery does not indicate that the prothrombin percentage may not drop to dangerously low levels postoperatively. The fourth to the seventh day after operation was found to be the time when levels were lowest. The postoperative prothrombin level in seven cases following biliary surgery is illustrated. Five of these patients were jaundiced; two were not jaundiced. In all of them there was a significant drop in prothrombin activity between the fourth and seventh day, an interval that might be called the "critical period." Patient P.V. had a moderate degree of jaundice of four weeks' duration, due to a common duct stone. This patient was given daily doses of 3 mg. of vitamin K with bile salts preoperatively. On the fourth postoperative day the level dropped to 63 per cent. Six milligrams of the vitamin, with bile salts, were given, and in one-half hour the level was 100 per cent. This level was then maintained on a 3 mg. daily dose until the patient was on an adequate diet.

No toxic effects and no nausea or vomiting were observed after the administration of the synthetic vitamin K. One patient was given as much as 50 mg. of the compound in a twenty-four-hour period without any ill effects. However, the prothrombin level could not be elevated above normal even with this relatively massive dose. From this observation I supposed that there was a stabilizing effect, most likely through the liver, which prevents an increase in the plasma prothrombin level above normal.

Parenteral Administration. Parenteral administration of vitamin K has several advantages over oral administration. By the oral route, there may be a lack of absorption due to intestinal obstruction, paralytic ileus or some other intestinal complication. By the parenteral route the vitamin may be given to patients who are unable to take it orally because of nausea or vomiting. In the treatment of hemorrhagic disease of the new born, for which vitamin K is very effective, the parenteral method is especially indicated. When the substance is administered parenterally it is not necessary to give bile salts.

The average initial dose was 1 to 3 mg. given intravenously and followed by 3 mg. daily as a maintenance dose. Some patients received 1 mg. daily and responded favorably, while others needed larger doses. The intramuscular dosage used was the same. However, this method of administration was not as satisfactory as the intravenous route. The case of O.M., a patient with cholelithiasis and jaundice due to secondary hepatitis, illustrates the intravenous therapy followed. The level of plasma prothrombin before operation was 84 per cent. On the first day following cholecystectomy the level dropped to 62 per cent. Two milligrams of vitamin K_5 was given intravenously, and in one-half hour the level reached 86 per cent. In two hours it was 100 per cent. Twenty-four hours later it had dropped to 71 per cent. At this time 1 mg. was given intravenously three times a day. The prothrombin level returned to normal and remained there with this regime. H. M. a patient with jaundice due to a common stone, illustrated the more gradual response by the intramuscular route. The prothrombin level on the first day following a choledochostomy was 83 per cent; on the second, 70 per cent, and on the third, 64 per cent. Three milligrams of vitamin K_5 was given intramuscularly. In one hour the lever was 75 per cent; in two hours, 76 per cent, and in three hours, 80 per cent. The percent then dropped to 74 in four hours. Three milligrams of vitamin K_5 was given intramuscularly with 1 Gm. of bile salts by mouth. In one hour the level increased to 78 per cent; in two hours, to

84 per cent, and in three hours, to 86 per cent. The level again dropped in twenty-four hours to 67 per cent. Vitamin K (2-methyl-1, 4-naphthoquinone), 2.4 mg. with 1 Gm. of bile salts, was given by mouth. In twenty-four hours the level was 68 per cent; in forty-eight hours, 90 per cent, and in seventy-two hours, 96 per cent. This level was maintained. However, the patient was improving generally, and the two factors were probably responsible for the continued oral improvement.

The response to the intravenously given vitamin K-active compound occurred within three-quarters of an hour to one and one-half hours. Patients with relatively good hepatic function showed normal levels of plasma prothrombin within two hours after the administration of the active compound. However, patients with damaged livers often did not reach a normal level of plasma prothrombin until twelve hours had elapsed; others never reached normal levels, in spite of the prolonged therapy.

SUMMARY

The dosage of the oral and parenteral synthetic compounds recommended varies from 1-3 mg. daily.

The dose of the vitamin K-active compound needed to maintain the plasma prothrombin varies with the individual patient. Maintenance doses can be estimated only by repeated prothrombin determinations. One milligram three times a day or 3 mg. in one dose are satisfactory amounts for maintenance.

Bile salts are necessary with the vitamin K compound for the patients who do not have bile salts secreted into the intestinal tract.

Bile salts need not be given when parenteral vitamin K therapy is used. However, their value in patients who are not secreting the bile salts into the intestinal tract must be recognized. Their deficiency may produce adverse effects in the body economy not related to prothrombin.

The effect of the parenteral water soluble compound vitamin K is no greater than that noted after the use of the oil-insoluble vitamin K compound, but vitamin K_5 has the distinct advantage that it can be given at any time in the preoperative or postoperative course, regardless of whether the patient is able to take or absorb drugs by mouth.

A pronounced response to the synthetic vitamin K compound almost invariably occurs within one-half to one hour.

Patients with relatively good hepatic function showed normal plasma prothrombin levels within two hours, while patients with damaged livers reached normal levels in twelve hours or did not reach normal levels in spite of prolonged vitamin K therapy.

Clinically, patients with severe damage of the liver did not give as good a response to the vitamin K-active compound or maintain the level of plasma prothrombin as well as patients with relatively good function of the liver.

No nausea or vomiting and no toxic effects were observed following large doses of the synthetic compounds.

In biliary tract surgery the fourth to the seventh postoperative day constituted the period when the prothrombin activity most frequently reached dangerously low levels.

Hypoprothrombinemia may occur with or without jaundice and with or without bleeding; no definite relationship between the degree or the duration of the icterus and the decreased prothrombin levels can be made. However, it is true that prothrombin levels approaching the bleeding levels will be encountered more frequently in jaundiced patients, particularly if considerable liver damage is present.

RELAPSING FEBRILE NODULAR NONSUPPURATIVE PANNICULITIS (WEBER-CHRISTIAN DISEASE)

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AND
THEODORE M. COHEN, M.D.
CHICAGO

Two cases of relapsing febrile nodular nonsuppurative panniculitis limited to the lower limbs were observed at the Northwestern University Skin Clinic in 1940. Since this disease is rare and the diagnosis often difficult, a description of these cases was deemed advisable.

The characteristic feature of Weber Christian Disease is the recurrence of crops of nodules in the subcutaneous fatty tissues. The first published report of the disease, made by Pfeifer[1]

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in 1892, designates it as "herdweiser Atrophie des subcutanen Fettgewebe." The nodules are discrete, vary in size from 0.5 cm. to 1.5 cm., and upon becoming confluent may form indurated areas as large as 10 cm., as recorded by Gilchrist and Ketron.[2] These nodules and indurated plaques are usually painful and tender. Since the lesions are relapsing and as a rule nonsuppurating, Weber,[3] in 1925, named this condition "Relapsing Nodular Nonsuppurative Panniculitis." Christian,[4] in 1928, noticed that most cases were accompanied by fever and thus gave the disease its full name. The pathologic changes are necrosis of the subcutaneous fat followed by a fibrosis, resulting in a sharply circumscribed area of depressed skin.[5] The small nodules may disappear without leaving any trace.[6]

The initial lesions of Weber-Christian Disease may be similar to those of erythema induratum, erythema nodosum, or subcutaneous sarcoids, but in the latter diseases the epidermis and corium show more marked inflammatory reactions and the nodules are not followed by atrophy of the subcutaneous fat without changes in the skin. Nodular eruptions of drug origin, principally the halogen group, may quite closely simulate this disease. A biopsy may be necessary to establish the diagnosis. In Dercum's disease the lipomas remain unchanged for years. Localized scleroderma is usually slower in developing and the induration is in the corium. The lesions in nodular syphilis are painless, and leave fine atrophic scars on healing.

The cause of this syndrome is undetermined. Focal infections of teeth and tonsils were observed in the five cases reported by Bailey.[7] In several cases the ingestion of halogens, both iodides and bromides, was a factor, with remissions when the drug was discontinued. A vitamin poor diet was proved to be an etiologic factor in a case reported by Reed and Anderson.[8] Blinkely[9] suggests that some cases of traumatic fat necrosis of the breast may perhaps fall into this group. In the first case reported in this paper, the patient was on a low fat, carbohydrate, and starch diet for about one year before the nodules appeared, and the blood showed a cholesterol of 334 mg., per hundred cubic centimeters of blood plasma.

REPORT OF CASES

Case 1. — H. C., a white woman, age 38, housewife, first came to the Medical Department of Northwestern University on August 13, 1938. She stated that when she was eight years old she had been hit on the head with a brick. Since then she has had headaches and a blind spot in the upper anterior field of vision of the left eye, unrelieved by glasses. She had a marked photophobia, and headlights blinded her for several minutes. Her menstrual flow had been seven days for the past three or four years and prior to that her periods were normal. She also complained of flatulence and distention from cabbage, onions, cauliflower, gravy and all fatty foods, and of hot flashes with an occasional feeling of suffocation.

Physical Examination. — The patient was obese, weighing 183 pounds; height 62½ inches; temperature 98.6 F.; pulse rate 60; respiration 14; blood pressure 154 systolic and 98 diastolic. The head, scalp, ears, and nose were normal. The pupils were regular and reacted to light and accomodation. Extra ocular muscles were normal. Tonsils were hypertrophied. She had upper and lower dentures. Neck, chest, breasts, and heart were normal, and the liver, kidney, and spleen were not palpable. The abdomen was obese, with tenderness on deep palpation in the entire lower half and the right upper quadrant. The cervix was lacerated; the uterus movable, not tender; rectocele and cystocele were present. On September 24, 1938, the patient was given 10 gr. sodium bromide T.I.D. and after taking the bromide for a week no skin lesions appeared.

X-ray examinations showed a pathologic gall bladder. On November 17, 1938 a Cholecystectomy and appendectomy were performed.

On December 25, 1938 patient was referred to the Obesity Department and put on a low fat, carbohydrate, and starch diet. By December, 1939 she had lost twenty-five pounds. On February 8, 1940 patient was transferred to the Department of Dermatology. She stated that about January 18, 1940, during the extremely cold weather, she had noticed soreness, tenderness and blueness of the upper medial surfaces of the calves of the legs. Burning was present, but later there were recurrent attacks of chills confined to the region of the knees. Examination revealed several purplish red macular lesions, varying in size from 2 to 10 cm., on the upper inner aspects of both calves and in the region of the knees. On palpation these were found to be indurated and numerous small nodules were felt beneath the skin. By March 18, 1940 the lesions had practically disappeared. Five grains of sodium bromide and potassium iodide were given, and within forty-eight hours the lesions recurred on the calves of the legs.

Laboratory Examination: — Examination of the blood showed 13.2 percent hemoglobin, and 4,400,000 red blood cells, and 8,650 white blood cells per cubic millimeter; the differential count was normal. The Kahn reaction of the blood was negative. The basal metabolic rate was plus 3 percent. Chemical studies of the blood showed Urea 9.4 mg., Uric Acid 4.1 mg., Sugar 124 mg., Cholesterol 334 mg., Calcium 10.5 mg., Phosphorus 3.2 mg., Chlorides 490 mg. per hundred cubic centimeters. Bromide less than 75 mg. percent. Examination of the urine on several occasions showed no albumin or sugar.

Case 2. — A.M., a white woman, 35 years old, entered the Northwestern University Clinic on May 25, 1939. She complained of tender, painful "lumps" of ten days duration on both legs between the ankles and knees, and of slight itching of the legs especially during the night.

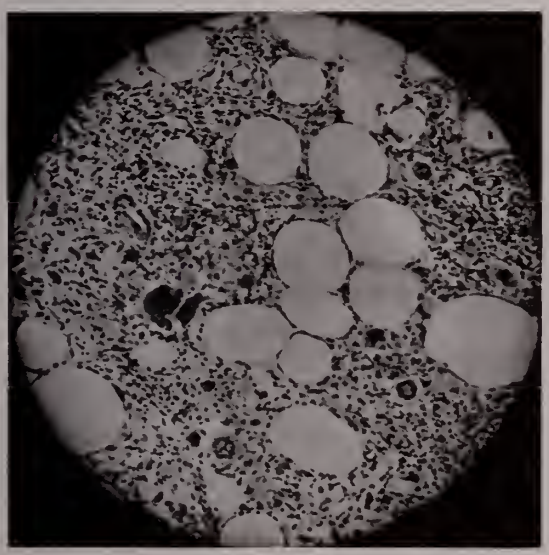


Figure 1. Foci of multinucleated cells, and diffuse infiltration between fat cells.

The physical examination revealed a well-developed body. A group of hard nodules varying in size from 1.5 cm. to 2 cm. were present in the legs. The skin overlying the nodes was reddish purple, and was not bound down to the underlying nodules. There were no erosions and some of the smaller lesions were moderately soft. The temperature was 100.2 degrees F., pulse rate was 84, and respirations were 16 per minute. The eyes reacted to light and accommodation, and extra ocular movements were normal. The ears and nose were essentially negative. The teeth presented moderate caries and a mild gingivitis. The heart and lungs were essentially normal. The blood pressure was 136 systolic and 82 diastolic. The abdomen was negative, and the extremities, except for the subcutaneous nodules, were essentially negative. Pelvic and rectal examinations were negative.

The history showed that on April 28, 1939 the patient was given a prescription containing Sodium Bromide, and that she had been taking various patent medicines. On May 5, 1939, the prescription containing Sodium Bromide was refilled. On June 1, 1939 new lesions appeared on the anterior surface of the left leg.

Laboratory Examination: — Examination of the blood showed 12.4 percent hemoglobin and 4,060,000 red blood cells and 5,750 white blood cells per cubic millimeter. The urine negative. The Kahn reaction of the blood was negative. The basal metabolic rate was minus 15 percent. Chemical studies of the blood showed Urea 13.5 mg., Uric Acid 2.68 mg., Sugar 76.5 mg., Cholesterol 218 mg., Calcium 10.3 mg., Phosphorus 4.26 mg., Chlorides 500 mg., Bromides less than 75 mg. per hundred cubic centimeters.

HISTOLOLGIC OBSERVATIONS

Histologic examination of sections of skin taken from the lesions of the legs of both patients disclosed similar findings.

Subcutaneous Tissue. — The lobules of fat showed wide separation by strands of connective tissue, and the fatty tissue was diffusely invaded by a cellular infiltration which occurred both in foci and in narrow strands separating the fat cells. The infiltrated areas were edematous and contained a large proportion of lymphocytes and histiocytes with scattered polymorphonuclear cells, eosinophiles, and connective-tissue cells, and occasional plasma-cells. There were foci of many multinucleated cells, some small and others large foreign body giant-cells. The blood vessels appeared more numerous, were dilated, and had perivascular mantles of infiltration.

Corium. — The corium was edematous throughout. The blood vessels at all levels of the corium were dilated and surrounded by loose mantles of cellular infiltration, consisting largely of lymphocytes with occasional histiocytes and eosinophiles.

Epidermis. — The epidermis showed a slight hyperkeratosis, and a mild intercellular edema.

CONCLUSIONS

1. The etiology of Weber-Christian Disease has not been established.

2. In the first case reported in this paper, the lesions did not occur until the patient was on a prolonged low fat, carbohydrate, and starch diet, and the halogens did not precipitate the lesions before the patient was on a reducing diet.

3. Once the syndrome was established, we were able to precipitate the lesions by giving bromides and iodides.

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ACUTE PERFORATION OF GASTRIC AND DUODENAL ULCER

A Study of 200 Consecutive Operated Cases

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One of the most disastrous catastrophies in man's existance is the perforation of a gastric or duodenal ulcer, which offers to the medical profession one of the perplexing problems of the day. The mortality of perforated ulcer cases has not been materially reduced in the past fifteen years, although, there has been a marked reduction of mortality in all other diseases of the gastro-intestinal tract, and, not withstanding our better comprehension of peptic ulceration, of the incessant experimental and clinical investigations of this disease, as well as our better knowledge of the physiology, pathology, and pathological physiology of the digestive tract, together with a very distinct improvement in the pre and post operative management of these cases.

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Presented before the Section on Surgery, 101st Annual Meeting, Illinois State Medical Society, May 21, 1941.

In 1930 the average reported mortality of perforated peptic ulcer was 26% and in 1939 was reduced only to 23%, while the mortality for resections in the entire gastro-intestinal tract has been reduced to about 5%.

In reviewing statistical reports from the various clinics throughout the world it is apparent that the incidence of gastric and duodenal ulceration is increasing. This upward trend is especially reflected in one of the most serious of gastro-duodenal complications, namely perforation.

DeBakey, in analyzing the statistics of the Charity Hospital in New Orleans found the incidence of gastro-duodenal ulceration increasing gradually from 443.7 per 100,000 hospital admissions in 1929 to 614.3 per 100,000 hospital admissions in 1938. However, the comparable figures for acute perforated ulcer was 13.9 per 100,000 admissions in 1929 and 78.3 per 100,000 hospital admissions in 1938. Shawan reported an increased incidence from the Receiving Hospital in Detroit, and Judine in Russia found an annual increase from 25 cases per year in 1925 to 273 cases in 1937.

This increased incidence reported from other clinics is similarly reflected in our institution, the Cook County Hospital, when it is found that in 1925 Meyer and Brams reported the results of their study of a series of 62 consecutive cases of acute perforation of gastric and duodenal ulcers operated upon at the Cook County Hospital during the previous three years, 1922 to 1925, averaging just under 21 cases per year.

This present series of 200 consecutive operated cases from the same institution a decade later was performed during the interim from January 1, 1935 to June 1, 1937 or 29 months, averaging 83 cases per year. This represents an increase of 300 per cent, while our total hospital admission for the same period of time has increased only 60 per cent.

We feel that conclusions drawn from this series may be of value, inasmuch as the total number of cases were operated within a short period of time, the operative procedure was performed by the same group of surgeons and the treatment instituted was, in general, similar. All of the patients were found at operation to have either a gastric or duodenal perforation. The cases of forme fruste and penetrating ulcer were excluded.

Of this series 151 patients or 75.5% recovered, and 49 patients or 24.5% died. The results of this study are tabulated as follows:

TABLE 1

Sex Incidence

	No. Cases	Percentage
Males	197	98.5%
Females	3	1.5%
Total	200	100.0%

Sex Incidence: From Table 1 it will be noted that males make up over 98% of the cases. This observation is in agreement with reports made by other investigators, which nearly all show a marked preponderance of perforated ulcer in the male sex.

An amusing, and perhaps somewhat embarrasing, observation has been made by us that in our cases there was a high percentage of married men. What reflection this observation may have on the quality of home-cooking, the rapidity of eating, or the conversation at dinner might best be left unmentioned.

Class and Occupation: Gastro-duodenal ulceration respects no class, occurring in the rich and poor alike. However, from our experience with the class of patients in the Cook County Hospital, and those in our private practice, it is our opinion that the complication of perforation occurs at least fifty times more frequently in the poor unintelligent patients than it does in the more educated observing groups. While the great majority of the cases in our study may be classed as unskilled workers, various authors have reported that 20% of peptic ulcer occurs in mental, or sedentary workers, 58% in skilled workers and 16% in unskilled workers.

Racial Incidence: It is often stated that acute perforation of gastric or duodenal ulcer occurs with less frequency in the colored race than in the white race. That this view is not entirely correct is evidenced by the autopsy statistics recently reported by Portis and the late Richard H. Jaffe, comprising over nine thousand consecutive necropsies, which revealed the incidence of peptic ulcer to be only slightly higher in the white race, namely, 5.23%, and 3.5% in the colored race.

TABLE 2

RACIAL INCIDENCE

The incidence of perforation in the negro race approaches that of the white race when statistics are corrected for ratio admissions.

Autopsy Statistics

Portis & Jaffe

Incidence of Gastro-Duodenal Ulceration in 9,000 consecutive necropsies.

White Race — 5.23%

Negro Race — 3.5 %

Clinical Statistics

Thompson

352 Cases Perforated Peptic Ulcer.

Race	No. Cases	Percentage	Incidence per 100,000 Hospital Admissions
White	332	94.3 %	157
Negro	17	4.8 %	121
Indian	1	.28%	146
Mongolian	2	.57%	156

DeBakey also points out that when the hospital admissions are corrected for the total number of colored patients admitted the incidence of perforation in the colored race approaches that of the white race.

Chang, reporting from the Peiping Union Medical College Hospital, has shown that the frequency is the same as in this country, and that the incidence of perforation was 10.4%.

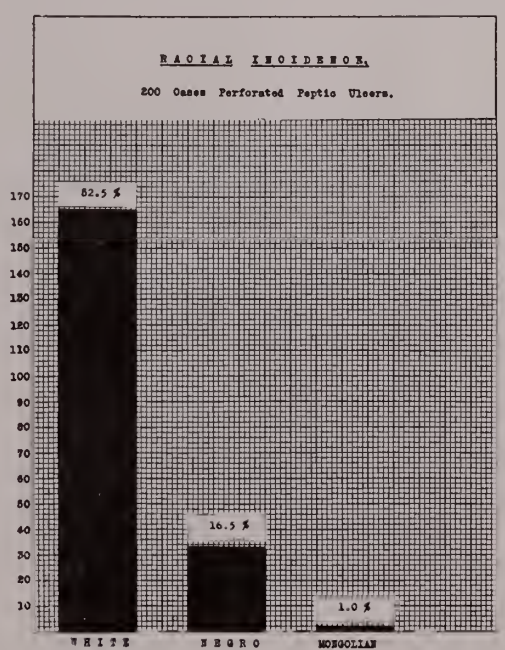


TABLE 3

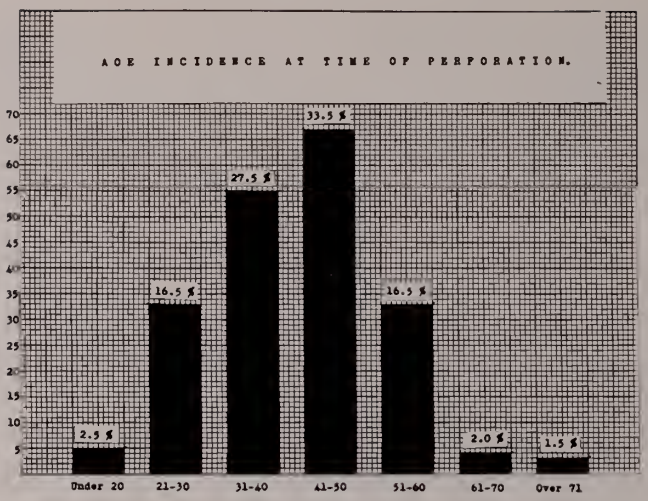


TABLE 4

Age Incidence: The majority of authors are in agreement that acute perforation of gastric and duodenal ulcers are most common during adult life, namely, the 3rd, 4th and 5th decades. Our series shows the occurrence to be 16.5% during the 3rd decade of life, 27.5% during the 4th decade and the highest incidence, 33.5% during the 5th decade. The incidence during the 6th decade of life was about that of the second decade, 16.5%.

From table V it will be noted that the frequency of perforation, according to age, is relatively the same in both the colored and white races, namely, during the 5th decade of life.

Seasonal Influences: Although many investigators have stated that a definite seasonal influence in gastro-duodenal perforation exists, others have been unable to corroborate this finding. In this series, during 1935, ninety-six cases of perforation occurred, which were divided as follows:

25 cases, or 26.4% each, for the spring, summer and fall seasons, and 21 cases, or 21.8%, during the winter season. The following year, 1936, 71 cases of perforation occurred. These showed a small degree of seasonal variation, being lowest in the summer months, with 14 cases, or 19.8%, 17 cases, or 23.9% during fall, 19 cases, or 26.8% during winter and 21 cases, or 29.5% during spring.

TABLE 5

AGE INCIDENCE ACCORDING TO RACE AT TIME OF PERFORATION:

	White		Colored		Yellow	
	No. cases	per cent	No. cases	per cent	No. cases	%
Under 20 years of age	4	2.44%	1	2.94%		
21 to 30	30	18.29%	3	8.82%		
31 to 40	44	26.83%	11	32.35%		
41 to 50	53	32.31%	13	38.24%	1	
51 to 60	27	16.47%	5	14.71%	1	
61 to 70	4	2.44%				
Over 71	2	1.22%	1	2.94%		
	164	100.0 %	34	100.0 %	2	

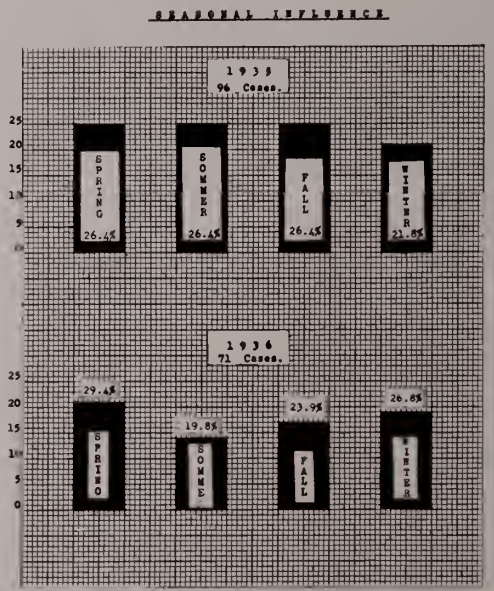


TABLE 6

Peterson states that a definite relationship exists between abrupt changes in weather and the onset of acute illness. We are engaged at the present in correlating this series of cases with atmospheric changes, and will report on this subsequently.

The etiological cause, as well as the pathogenesis of peptic ulcer, remains cloaked by obscurity. However, our present knowledge permits us to maintain that there can be no one cause, that this disease is produced by several pathologic mechanisms that interfere with normal physiological activity and health. We believe that during the period in which the incidence of gastro-duodenal ulceration has increased that the "way of life" has changed, that the radio, movies, sensational newspaper stories, taverns with their night life, intolerance, irreligion and divorce have played no small part in producing the neurogenic and psychogenic factor in ulceration. It is true that among the predisposing causes heredity, education, tissue susceptibility, environment, infection, dental caries, economic conditions, diet, age, and climate must be recognized as contributing factors. However, there remain the four cardinal exciting causes which are: Infection, Trauma, Tobacco, and Alcohol.

Pathology: The location of the perforation was given as duodenal in 103 cases, gastric in 95 cases and gastro-jejunal in 2 cases.

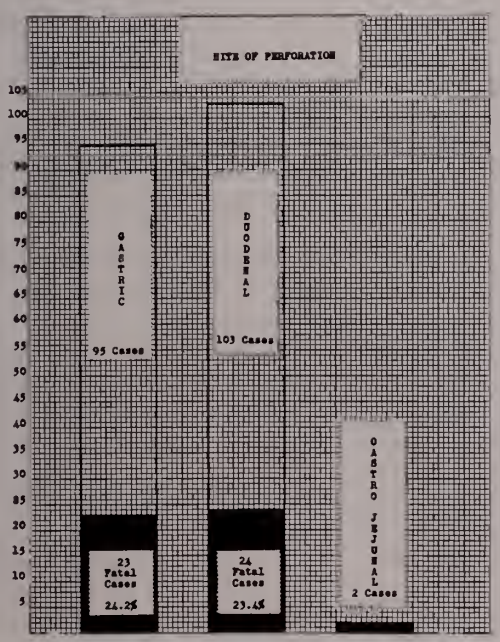


TABLE 7

The gross pathology may be of one or two varieties: viz, 1. a soft lesion, usually small, varying from one millimeter to one centimeter in diameter, showing marked evidence of an attempt to seal itself off with mucus and fibrinous exudate, which acts as a plug and frequently is supported by a tag of the fatty omentum. Here we note blanching of the edge of the ulcer with freezing or agglutination of all the layers of the viscus, hence, obstruction to all blood and lymph flow in the area involved with marked edema of the tissue peripheral to the ulcerated area. This type offers the best prognosis when operated early. Secondly, the callous lesion which is larger, often two by two centimeters, is punched out with sharp, red, necrotic edges and on microscopic examination shows evidence of degenerative arterial endarteritis. This lesion most frequently occurs in the stomach, and is usually seen in individuals past 40 years of age.

Davison, Aries and Pilot reported their study of cultures of the peritoneal fluid in 34 cases of this series. They found that cultures taken in the first six hours after perforation are usually sterile, but when positive offer a poor prognosis. When the cultures are sterile, the post operative course is smooth and the mortality low. They found the most frequent organism to be the B. Coli and the Strepto diplococcus, usually of low virulence.

The first six hours after perforation are usually the period of invasion and irritation. During the second six hours cultures frequently show Streptococcus, Staphlococcus or Colon bacilli, usually of low virulence. The organisms probably gain access to the peritoneum from lower intestinal segments during the ileus that is produced in this period and which is frequently called one of reaction. After the first twelve hours there is frank evidence of infection, which usually terminates in a fatal peritonitis, unless surgical aid is obtained.

The immediate activity in 53 patients, just prior to their perforation, was found to be variable. Nineteen patients, or 9.5%, were asleep; twelve patients, or 6%, were working; three had just finished eating. In eighteen patients perforation occurred while they were reading a newspaper, listening to the radio, walking or fishing. In one case perforation occurred while boarding a street car.

From the reports of large series of cases by Brown and Eliason, and Ebeling, the incidence of perforation in peptic ulcer is found to be from 10 to 11 per cent. It is, however, interesting to note that perforation may be the initial symptom of a peptic ulcer and patients may be totally unaware of the existence of ulceration. Most usually, however, an ulcer history is given of post prandial distress, relieved by baking soda or milk and cream.

In 139 patients, or 69.5%, of this group such a history was obtainable. In 58 patients, or 29.0%, no previous ulcer history was obtainable. In 5 patients, or 1.5%, no mention of symptoms was made in the history.

The duration of symptoms in the group with the positive antecedent history of ulcer, many of whom had been hospitalized on previous occasions, varied from one month to twenty years, with the average being five years. In nine cases, or 4.5%, surgery had been previously preformed for peptic ulcer. Of this latter group, six patients, or 3.0%, had an antecedent acute perforation within the previous two years.

In the group of 58 patients, or 29%, with a negative antecedent history of ulcer, twenty-two patients, or 9.0%, stated that mild epigastric distress or pain had been present on occasion during the preceding week or month of their perforation. These prodromal symptoms were of such mild character as to escape the notice of the patient, and only on close questioning were they elicited. In 36 patients, or 5.5%, no ulcer history whatsoever was given.

Clinical Manifestations: The picture presented by a patient suffering from an acute perforated ulcer is dramatic. Moynihan has described it aptly as an "agony suffered almost beyond belief," written on every line of a face that speaks of torture. The face is pale, haggard and watchful. The brow and temples are bathed in sweat, the hair soaked. The patient struggles for breath in short panting respirations which are wholly costal, for the diaphragm, being an abdominal muscle, is fixed. Words spoken are jerked out in expiration only, every syllable is part of a deep moan. What strikes every onlooker is that the body of the patient is rigid and motionless, no slightest movement dares be attempted. If endeavor is made to touch the abdomen the patient's hands are at once lifted in protest and protection.

The pain, which is the signal of rupture, is caused by pylorospasm and the chemical irritation of the digestive juices and bile coming into contact with the peritoneum.

Vomiting occurred in 118 patients, or 59%, it varied from one to ten times, and in three cases the vomitus consisted of frank blood. In 66 patients, or 33%, vomiting at no time occurred. Nausea was present in only seven patients, while in nine cases no mention of either of these symptoms was made in the history. Reference of pain to one or both shoulders was volunteered by 15 patients, however, the majority of the patients were not closely questioned on this point.

Physical Findings: Consisted of abdominal tenderness and rigidity, the former being most marked in the upper abdomen. The rigidity is characteristic and is best described as being "board-like." The temperature and pulse rate in the early or primary stage of perforation usually are not elevated. Generally, they are normal or subnormal. One of the constant findings in acute perforation of a gastric or duodenal ulcer are the changes in intestinal peristalsis. There is a paucity of literature on abdominal auscultation which is surprising, inasmuch as the "silent abdomen" is pathognomonic of peritonitis. The late John B. Murphy used to refer to the abdomen in acute diffuse peritonitis as being "silent as the grave." In over 95% of this series the peristaltic sounds were absent. Melena was associated with the perforation in nine patients, or 4.5%.

Examination of the blood was made in 100 cases and an average of 15,000 leukocytes were found with over 80% polymorphonuclear cells.

Fluoroscopic examination of the abdomen was done on 112 patients in an effort to find evidences of free air beneath one or both leafs of the diaphragm. This procedure is one of the most reliable of the diagnostic aids available and has recently been emphasized by Vaughan and Singer. In 112 cases fluroscoped ninety-two cases, or 82.1%, a spontaneous pneumoperitoneum was present.

Diagnosis: The direct diagnosis is usually not difficult, if the condition is kept in mind. The diagnosis of a perforation of a gastric or duodenal ulcer is made on the following:

History of:

Indigestion in a male

Usually in 3rd, 4th, or 5th decade of life — with

Sudden Sharp Epigastric pain

Quickly becoming diffuse, of such severe intensity as to cause the patient to double over with:

Severe Prostration

Vomiting, in over 50% of the cases

Cold, Clammy, Sweating Skin

Temperature, Pulse and Blood Pressure Normal, or Subnormal

"Board-Like", Rigidity of Abdomen

Abdominal Tenderness, Most Marked in Epigastrium

Absence of Peristaltic Sounds

Obliteration of Liver Dullness

Spontaneous Pneumoperitoneum in over 80% of cases

Elevation of White Blood Count averaging 15,000 with Polymorphonuclear cells predominating

Differential Diagnosis: Perforated ulcer may simulate a ruptured appendix in that the spillage from an ulcer may travel along the right colonic gutter and at operation a normal appendix is found in a pool of peritoneal exudate. This condition was found in seven of the 200 cases. In acute appendicitis the pain is dull, aching, boring or colicky and not the severe sudden overwhelming pain that is characteristic of ruptured ulcer. In rūptured ulcer at or above the mid point of the lesser curvature of the stomach the spillage may go to the left, following down along the left colonic gutter and accumulate in the para rectal fossa producing a pelvic peritonitis.

In acute cholecystitis there is usually a history of indigestion, low grade temperature and increased pulse, localized tenderness and rigidity in the right upper quadrant. The pain is colicky, referred to the right scapula or is localized over the gall bladder. Usually a slight icterus is present.

In cases of intestinal obstruction the onset is gradual with a history of previous operation. Nausea, vomiting, distension and increased peristaltic activity occur early.

In acute pancreatitis diagnosis generally is made on a history of previous biliary attacks, with severe, excruciating pain, often referred to the back. Confirmatory evidence is given by determination of the blood amylase.

Other conditions that must be considered and ruled out are:

1. Coronary Occlusion
2. Mesenteric Thrombosis
3. Intussuception
4. Pneumonia
5. Ruptured Ectopic Pregnancy
6. Diaphragmatic Pleurisy
7. Lead Colic
8. Ptomaine Poisoning
9. Rupture of a tuberculous or typhoid ulcer
10. Renal Colic
11. Twisted Ovarian Cyst
12. Acute Alcoholism
13. Gastric Crisis

Prognosis: In untreated cases the mortality approaches 75%. The principal factors that influence the mortality are:

1. Time interval elapsing from perforation to surgical repair.
2. Reaction of the patients tissue to perforation.
3. The amount of material spilled in the peritoneal cavity.

The Contributing factors to mortality are:

1. Age of the patient. The mortality is lower in the second and third decades.
2. Sex. The mortality is higher in females.
3. General condition of the patient. The degree of malnutrition is directly proportional to mortality.
4. Location of Lesion. The mortality is lower in duodenal perforation and greater in gastric perforation. The higher the lesion is located on the lesser curvature or on the posterior wall of the stomach, the greater the mortality.
5. Pre and post operative management. Decompression of the stomach prior to and after surgical intervention. Maintenance of water balance and treatment of ileus by continuous Wangensteen suction. Supportive measures as blood transfusion, sedation as morphine.
6. Anasthesia. In our hand spinal anasthesia has given the most satisfaction.
7. Complications. These are directly proportional to the elapsed time between perforation and repair, the type and length of operation preformed and the amount of trauma produced by surgical manipulation.
8. Type of Operative Procedure. We believe that the indications are to repair the defect in the viscus and leave all reconstructional surgery for a later date. In contrast, continental surgeons advocate gastric resection.

TABLE 8
MORTALITY RATE

	No. Cases	Lived	Died	Percent
No time stated	6	4	2	
Under 6 hours	27	24	3	11.0%
From 6-12 hours	113	91	22	19.4%
From 12-18 hours	31	25	6	19.3%
From 18-24 hours	7	3	4	57.0%
From 24-30 hours	4	1	3	75.0%
Over 30 hours	12	3	9	75.0%
Total	200	151	49	ave. 24.5%

It becomes self evident that any condition wherein the peritoneal cavity is exposed to contamination by acid content, food, or bacteria, that the mortality rate will vary directly with the length of time elapsing before the avenue of contamination is closed.

As has been shown by Davison and his associates, cultures taken within the first six hours after perforation are usually sterile. Other factors, as the size of the perforation alter the prognosis, since a perforation two or three millimeters in diameter does not afford the degree of peritoneal contamination that a perforation two centimeters does.

Complications and Causes of Death: Peritonitis and pulmonary infections cause 60 per cent of the complications and are the cause of death in over three fourths of the cases. Wound infection and evisceration have always to be considered and guarded against.

In considering the fatal cases of which there were 49, all occurring in males, they were divided according to site of perforation and occurring in the following age groups:

TABLE 9
PERFORATED PEPTIC ULCER
49 FATAL CASES

Site	White	Negro	Mexican	Yellow	Total
Gastric	18	4		1	23
Duodenal	19	4	1		24
Gastro-Jejunal	1	1			2

AGE GROUPS

	Duodenal	Gastric	Gastro-Jejunal
31 to 40	9	8	
41 to 50	8	8	1
51 to 60	5	6	1
61 to 70	1		
Over 71	1	1	
Total	24	23	2

Treatment: Our direct attack must be at prevention of this death dealing complication of gastro-duodenal ulceration. This can be best accomplished by a program of education of the laity, as to proper physical and x-ray examination, hygiene, diet, elimination of emotional upsets, erradication of oral infection and the elimination of self medication as is so publicly advocated by the advertisements of Gums, Tums, Alkazeltzer and similar nostrums frequently portrayed in the street cars, elevated trains and periodicals. Education must not stop with the patient. Our medical profession must realize in this disease procrastination has no place. The security of the patient depends upon immediate operation. Under active treatment patients are prepared for operation immediately and the procedure followed on my service is:

1. Gastric decompression by continuous Wangensteen suction.
2. Patient placed on his left side.
3. Hypodermic or morphine and atropine.
4. Spinal anasthesia.
5. Right para median or transverse incision.
6. Abdomen opened and pathology located.
7. Suture of the perforation with silk or linen purse string or Gold "Z" stitch.
8. Reinforced with interrupted Lembert sutures.
9. Tacking of a piece of omentum over suture line.
10. Aspiration of available peritoneal exudate and spillage especially between the liver and diaphragm.
11. Closure of the abdomen with interrupted sutures above the peritoneum, without drainage, but with a gutta percha drainage of the abdominal wall. In cases showing bacterial peritonitis, sulfanilamide is placed into the peritoneal cavity.

During the post operative period great care is given to keeping the patient in water balance, frequent use of blood transfusion, as well as proper administration of glucose and sodium chloride. These patients receive nothing by mouth during the period of acute ileus and are given fluids only when peristaltic activity returns. The patients are even turned over on their abdomen, hoping to prevent accumulation of exudates in the pouches of the peritoneal cavity. In a recent study we have found these cases have a deficiency of Vitamin C and through a grant by the Hoffmann LaRoche, Inc. all of them receive sufficient Vitamin C intravenously to bring their blood vitamin C level to normal. This Vitamin C study in gastro-intestinal disease is the subject of a special report and will be published later.

In conclusion we believe that the high mortality from perforation of gastro-duodenal ulcer will be lowered by: 1. A return to a saner, more wholesome and quiet way of living, and by 2.

Having the public become more ulcer minded, conscious of the great benefit from early and adequate treatment. 3. Also, by the medical profession recognizing perforation as a true surgical emergency, realizing that as each hour passes the mortality increases 2 per cent.

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THE INCIDENCE OF SYPHILIS IN ALCOHOLIC PATIENTS

A Statistical Study of 760 Consecutive Cases

ANDREW J. McGEE, M.D.
DWIGHT

The incidence of syphilis in alcoholic patients has always been regarded as being higher than that in the general population, and there are many references throughout the scientific literature which directly or indirectly correlate alcoholism and syphilitic infection.[1, 2, 3] However, a diligent search of the literature reveals only one statistical study which attempts to confirm such a relationship. Orenstein and Goldfarb[4] reported 1001 cases of alcoholism admitted to the psychiatric division of Bellevue Hospital; of which 680 were white male patients. There were 3.3% of these patients who had either a positive history of syphilis or a positive Wassermann reaction.

The present study was undertaken in order to add to statistical material which attempts to evaluate the relationship between syphilis and alcoholism. The subjects constitute 760 consecutive white male patients admitted to The Keeley Institue during the last six months of 1940 and the first six months of 1941.

The incidence of syphilitic infection in the general popoulation is variously reported as being anywhere from 0.19% to 10.50%. Because of this wide variation and to establish a basis upon which to make a comparison the syphilitic incidences reported by a number of authorities have been averaged (see Table, Fig. 1.) giving a syphilitic incidence in the general population of 4.98%. While this figure cannot be accepted as being absolutely accurate it is felt that it gives a closer approximation than would the results of any one survey.

AUTHORITY	CLASS STUDIED	INCIDENCE OF SYPHILIS	REFERENCE
Short, J. J. & Kelley, M. F.	Insurance Policy Holders	1.77%	Proc. Life Ext. Exam. 1:6-10, Jan. 1939
Diehl, H. S.	College Students	0.20%	Am. J. Pub. Health 21:1131 Oct. 1931
Pfeiffer, A. & Cummings, H. W.	General Population	10.00%	New York Ven. Dis. Infor. 12:495 (Nov. 20) 1931
Snow, W. F. & Brunet, W. M.	General Population	10.00%	N. Y. State Jour. Med. 26:560 (June 15) 1926
Lynch, K. M.	General Population	10.00%	Jour. S. Car. M. A. 16:9 (Jan.) 1920
Levin	White Milit. Recruits	10.50%	Quoted by Lynch
Kiser & Bohner	Male-White Private Practice	6.08%	Weekly Bul. N. Y. Dept. Health 21:147 (May 14) 1932
Usilton, Hunter, & Vonderlehn	Gen. Population White	0.28%	J. A. M. A. 110:64 (1938)
Dublin, L. I. & Lotka, A. J.	General Population	5.38%	Met. Life Inc. Co. No. 371 1937
Beck, J. R.	General Population	2.00%	Dela. State Med. Jour. 11:172-173, (Aug.) 1938
Blount, Capt. R. E.	Recruits & Soldiers	5.50%	Military Surgeon 84:40-45 (Jan.) 1939
Hadley, H. G.	Office Practice	2.35%	J. Lab. & Clin. Med. 25:45, 1939
Vonderlehr, R. A.	College Students	0.199%	J. A. M. A. 112:1207-1210 (Mar. 25) 1939
Vonderlehr, R. A. & Usilton, L. J.	General Population	0.180%	Ven. Dis. Inform. 19: 396 (Nov.) 1938
Editor J. A. M. A.	Gen. Pop. N. Car.	9.00%	J. A. M. A. 112:1260 (April 1) 1939
Osborn, E. D., Trainkle & Dolce, H. L.	Industry	6.7%	J. A. M. A. 114:893-894 (March 9) 1940
AVERAGE REPORTED INCIDENCE OF SYPHILIS		4.98%	

Figure 1 Incidence of syphilis as reported by various authorities.

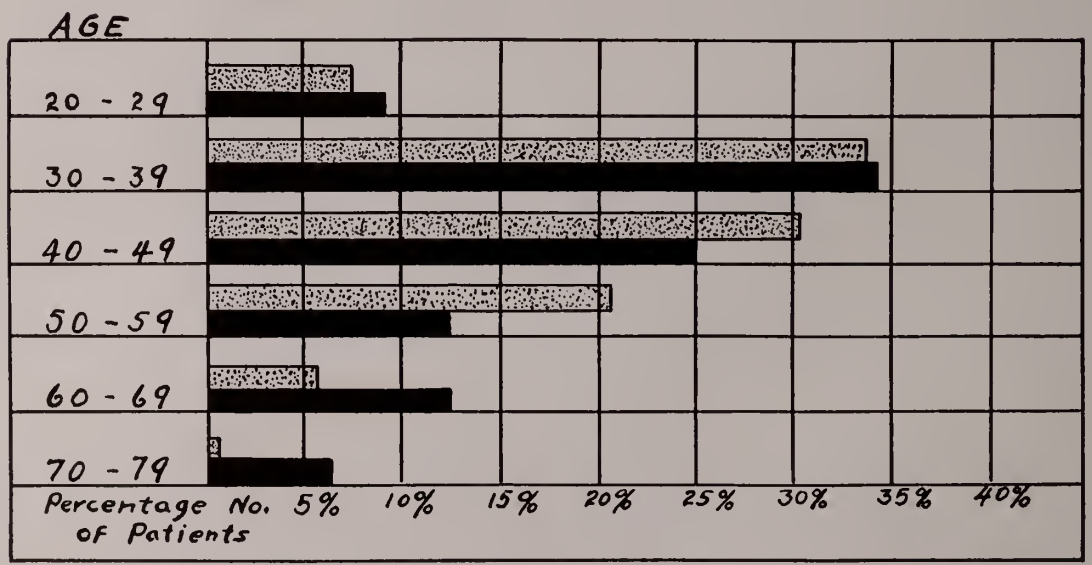
Method of Study — The total incidence of syphilis was calculated from routine serological examinations and from a detailed history of venereal infection, or a history of previous treatment, obtained from the patient or his relatives. The test used was the standard Kahn examination, using the technique as outlined by R. L. Kahn.[5] In 388 cases both Kahn and Wassermann examinations were made. All positive and doubtful results were repeated by an outside independent laboratory, and where there were any discrepancies between the two reports a third blood specimen was sent to the state laboratory for examination. Approximately every 15th blood serum, in addition to being tested in our laboratory, was sent to an independent laboratory as a check on our own technique.

Results — Of the 760 cases studied there were 15 (1.97%) who had both a positive history and a positive Kahn test, there were 7 (0.92%) who had a negative history and a positive Kahn test, and there were 10 (1.315%) who had a positive history but a negative Kahn test. (See Fig. 2) This gave a total syphilitic incidence of 32 patients or 4.2% and compares favorably with the average of 4.98% incidence in the general poplation Fig. 1.

Total Patients Examined	Pos. Kahn Test Negative Hist.	Pos. Kahn Test Pos. History	Neg. Kahn Test Pos. History	Total Incidence of Syphilis
760	7	15	10	32
	0.92%	1.973%	1.315%	4.2%

Figure 2 — Incidence of syphilis in 760 alcoholic patients.

The age of the syphilitic patients varied between 28 years and 79 years; the age of greatest incidence being between 30 and 39 years. This, however, may be explained by the fact that the greatest number of patients treated were in this age group. The graph (Fig. 3) shows the relationship between the number of syphilitic patients in each age group and the total number of patients in each age group.



▒ - Percentage of the 760 patients in each age group.

■ - Percentage of the 32 syphilitic patients in each age group.

Figure 3

SUMMARY AND CONCLUSION

Seven hundred and sixty white male patients treated in a private institution for alcoholism were studied to determine the incidence of syphilitic infection. 4.2% were found to have either a positive blood Kahn reaction or to give a history of having had syphilis or treatment.

The age of greatest incidence was found to be between the ages of 30-39 years.

The incidence rate of syphilis in the above study compares favorably with that found in the general population.

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THE DIAGNOSIS OF POLIOMYELITIS

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AND
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From January 1, 1935 to December 31, 1940, two hundred and ninety-two patents were admitted with the diagnosis of poliomyelitis. Of these the initial diagnosis was confirmed in 221 patients, or 75.6%. The diagnoses of the remaining 71 patients were most diverse; these we have classified in the accompanying chart. Top and Brosius[1] reported a series in which the initial diagnosis was confirmed in 56.3%.

We believe that this number of mistaken diagnoses is due to the fact that many of the acute infections we have listed would be impossible to differentiate from the systemic stage of acute anterior poliomyelitis. Therefore, particularly during the summer and early fall, patients with upper respiratory infections and gastroenteritis should be kept under observation until poliomyelitis has been ruled out.

The diagnosis of acute anterior poliomyelitis is dependent upon the history, neuro-muscular examination, and if any, or all, of these three common signs are found- stiff neck, rigid spine and ataxic tremors — a spinal fluid examination is indicated.[2] The spinal fluid findings are usually increased pressure, clear or slightly hazy fluid, which is sterile, moderately increased albumin and globulin, and normal sugar. Cell counts averaged around 250 per cubic millimeter, but may range from 10 to 1000. These cells are usually lymphocytes and mononuclears, altho early in the disease polymorphonuclear cells may predominate. Animal inoculation or neutralization tests are not practical.

In our series fifteen of the mistaken diagnoses were upper respiratory infections and three nonspecific gastroenteritidies; in all these cases the spinal fluid findings were normal.

In the stage of meningeal irritation of poliomyelitis it is necessary to differentiate those cases listed under the central nervous system. Many of these cases develop paralyses which in turn would require differentiation from the paralytic stage of poliomyelitis.

The most frequent error in this group was in mistaking tuberculous meningitis, of which we had nine patients. In acute anterior poliomyelitis the sensorium is rarely impaired. The patient is usually alert; while in tuberculous meningitis the patient is usually drowsy, stuporous or unconscious. Roentgenograms of the chest and the tuberculin test are of value. The spinal fluid findings of increased pressure and the cytology may be similar to that found in poliomyelitis, but a diminished or absent sugar and the demonstration of the tubercle bacillus would be confirmatory of tuberculous meningitis.

In the purulent types of meningitis the patient is prostrated, there is mental confusion and there may be convulsions; all these are rare in poliomyelitis. The spinal fluid is cloudy, under increased pressure, the cell count is high, with a

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(1) Top, F. H. and Brosius, W. L. Journal of Pediatrics, 10:27 — Jan. 1937. Differential Diagnosis of Poliomyelitis — with the report of a case of diffuse sarcomatosis of the meninges suspected to be a poliomyelitis.

(2) Levinson, S. O. Illinois Medical Journal 79: 475 — June, 1941. Early Diagnosis of Poliomyelitis.

preponderance of polymorphonuclears, albumin and globulin are increased, the sugar diminished or absent and the causative organism can be demonstrated by smears or cultures.

In the encephalitides following the virus contagions, the spinal fluid findings are identical with those in poliomyelitis. The history of the preceding disease would confirm the diagnosis. One patient who presented the symptoms and spinal fluid findings of an early poliomyelitis developed epidemic parotitis two days later. Many cases of mumps have spinal fluid findings similar to those found in poliomyelitis. Animal inoculations and neutralization tests for differentiating poliomyelitis and the various encephalitides are not practicable.

Under toxic encephalopathies we had one case of lead poisoning. The diagnosis was made on basophilic stippling and lead lines in the long bones. The spinal fluid was negative.

Two patients with hypertensive encephalopathy with acute glomerular nephritis (apparently secondary to scarlet fever) were diagnosed by exfoliation of hands and feet, the urinary findings of red blood cells, casts, and albumin — and elevation of blood pressure. Spinal fluid findings were normal.

Two patients with radiculo-myelitis (Barré-Guillaine Syndrome) revealed in the spinal fluid a greatly increased albumin content.

In our one patient with post-diphtheritic paralysis, the paralysis occurred three weeks after the history of a throat infection. Weakness or paralysis usually develops within a week of the onset of poliomyelitis. The pupils reacted to light but not in accommodation. The spinal fluid findings were normal.

We had two patients with hysteria; in one the brother was in the hospital with poliomyelitis.

In two patients with acute rheumatic fever that simulated the paralytic stage of poliomyelitis, it was found that the joints and not the muscles were involved. Reflexes and spinal fluid findings were normal.

Our two patients with subacute bacterial endocarditis were diagnosed by the septic course, which rarely, if ever, occurs in poliomyelitis. In addition they had cardiac murmurs, positive blood cultures, embolic phenomena and enlarged spleen. The spinal fluid findings were normal.

The one patient with scurvy presenting a pseudo-paralysis had a history of lack of vitamin C. The bleeding gums, position of the lower extremties, the extreme pain on pressure and Roentgen findings corroborated the diagnosis of scurvy. The spinal fluid findings were normal.

CONCLUSIONS

Of the 292 patients admitted with the diagnosis of poliomyelitis, 71 diagnoses, or 24.4%, were ultimately found to be incorrect.

During the systemic phase of poliomyelitis it is impossible to differentiate the onset of various other acute infections. In our series upper respiratory infections were the most frequent source of error. Therefore, these cases should be under observation until the diagnosis of poliomyelitis is ruled out, or established.

The various other conditions confused with poliomyelitis can be diagnosed by careful history, clinical and spinal fluid examinations.

CHART

ADMITTING DIAGNOSIS: Poliomyelitis

Patients	FINAL DIAGNOSIS:
	Respiratory System —
15	Upper respiratory infections (Pharyngitis, Tonsillitis, Otitis media, Bronchitis
1	Influenza
2	Pneumonia
1	Pulmonary Tuberculosis
	Gastro-intestinal System —
3	Gastro enteritis
1	Typhoid
	Central Nervous System —
7	Purulent meningitis
9	Tuberculous meningitis
4	Encephalitis
3	Encephalo-myelitis
1	C.N.S. lues with psychoses
1	Cerebral tumor
1	Acute benign lymphocytic meningitis
1	Lead encephalopathy
1	Hypertensive encephalopathy with acute glomerular nephritis
1	Polyneuritis
2	Radiculo-myelitis (Barré-Guillaine Syndrome)
2	Hysteria
	Circulatory —
2	Subacute bacterial endocarditis
2	Hemiparesis due to vascular accident
	Osseous —
2	Acute rheumatism
1	Pathology of hip
1	Trauma to hip
1	Cervical dislocation
1	Osteo-myelitis
1	Epiphysitis
	Muscular —
1	Acute myositis
	Metabolic —
1	Scurvy
	Unclassified —
1	Mumps.

Clinical-Pathological Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY

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PATENT INTERVENTRICULAR SEPTUM IN NEW BORN BABIES

Case I

Dr. Francis Donlon: This child was the second baby of its mother. It was an L. O. A. presentation. First state of labor was 1½ hrs., second stage, 1 hr. and third stage, 11 min. Delivery was spontaneous. The baby weighed 7 lbs. 1 oz. Its head was noted to be elongated in the anterior portion at birth. It was not difficult to make the child cry but its cry was feeble. It was also cyanotic. Had to be put into an oxygen bed for the first two weeks and then for a half hour after each feeding from this time on. The baby was unable to feed from birth and had to be fed by gavage the first three weeks of life and then was put on the bottle, taking about 1 oz. of milk. The feeding had to be finished by a dropper. After the first seven days the child became jaundiced. Its temperature was irregular running up to 105 degrees but on the 9th day was normal and remained so for the rest of the child's life. The child remained cyanotic and died thirty-three days after birth. Diagnosis: Congenital heart disease.

DR. VICTOR LEVINE:

At autopsy the child was emaciated. The head was large and flattened. On removing the chest organs, it was seen that the pulmonary artery was larger than the aorta and instead of lying in front of the aorta, it lay to the left; of course, as soon as that was seen, it was understood that there was probably considerable in the way of congenital difficulty. The right side of the heart was larger than the left. A defect 8 x 5 mm. in the membranous portion of the interventricular septum was noted. A flap-like membrane on the right side appeared to divert the blood stream upward from the left ventricle into the conus of the right ventricle. The foramen ovale was patent and 13 mm. in diameter. It is partly closed by a flap of membrane which is slightly fenestrated and fails to close a portion 5 x 2 mm. Stretching across the right chamber was a somewhat fenestrated membrane extending from the ridge joining the vena cavae to a point over the opening of the right coronary sinus. The pulmonary artery and the aorta are reversed. There is a marked narrowing of the aorta until it measures 10 mm. in circumference, at a point just above its junction with the ductus arteriosus. The ductus arteriosus is patent. The coronary arteries were somewhat reversed. The lungs floated quite well in water.

Anatomic Diagnosis: Detorsion defect of the heart with a patent interventricular septum and a patent foramen ovale; patent ductus arteriosus with a moderate coarctation of the aorta; marked persistent Chiari net in the right auricle.

This type of anomaly is along the lines of a number we have seen here but not as severe as some we have seen. With such a detorsion of the heart, the child will live at the most two days or one week. In this case there is a definite detorsion defect but the anomaly was not so extremely severe and the child was able to live thirty-three days. The only thing to remember about this case is that this is not a very severe congenital anomaly. In some of these severe anomalies the aorta will attach to the right

ventricle and the pulmonary artery to the left.

The Chiari net is a remnant of the right valve of the sinus venosus which is present in early embryonic life. Ordinarily this net causes no trouble. In this instance the net is much more complete than it is usually seen. It may have caused some cardiac embarrassment.

This case is shown because of the fact that the child did live thirty-three days with a large opening in the interventricular septum and because of the next case which has a somewhat similar anomaly.

Case II

Dr. Anton Vlcek: This child was the first baby of a 19-year old white woman. Her menstrual history was negative and she had no previous pregnancies or miscarriages. Her normal weight was 115 lbs. and at the time of delivery she weighed 159 lbs. Her physical examination was negative except for some edema of the fect. According to her menstrual history she should have delivered about three weeks before she did. She felt life in the fourth month and ran a normal course with only early nausea and vomiting. An x-ray was taken shortly before admission which was diagnosed as a dead fetus. Labor was short and spontaneous. There was an excessive amount of fluid of a brown color. On delivery the fetus was macerated. Patient ran a normal post-puerperal course.

Laboratory Findings on mother: Urine showed a trace of albumen; Wasserman was negative.

Dr. Victor Levine:

At autopsy the fetus weighed 1700 gms. and was 43 cm. long. The skin and internal organs are markedly macerated and the fetus was obviously premature. The heart weighed 16 gms. It was so much macerated that it was difficult to examine but careful inspection showed a 9 mm. defect in the membranous portion of the interventricular septum. The foramen ovale was patent but well closed by a flap of endocardium.

The common carotid arteries arose separately from the arch. The right subclavian artery, however, arose from the descending arch and extended to the right arm behind the esophagus. The aorta was narrowed to a circumference of 10 mm. above the junction with the ductus arteriosus.

Anatomic Diagnosis: Patent interventricular septum; moderate coarctation of the aorta; anomalous origin of the right subclavian artery from the descending portion of the arch; widely patent ductus arteriosus; prematurity; marked maceration of the skin and internal organs.

I decided to show this case in connection with the first one because of the somewhat similar anomalies. In this regard I may say that most of the stillbirths posted show practically nothing. It is only occasionally that we see a marked congenital anomaly in a stillbirth. In this instance because of the marked maceration of the organs, the anomaly was almost missed. Despite the fact that this heart has a patent interventricular septum, there is no detorsion defect as in the first case.

Question: Was there anything in the clinical findings of Case 1 during life that would lead you to suspect this to be a congenital heart case:

Dr. V. Levine: In this baby they suspected congential heart disease.

Question: How do you account for the persistent cyanosis after birth and after feeding.

Dr. V. Levine: The child was so poorly oxygenated that the slightest effort exhausted it. The effort of feeding was apparently too much for it and it became very week and cyanotic after each feeding.

Case III

POSTPUERPERAL DEATH FROM LATE METASTASES OF CARCINOMA OF COLON

Dr. Victor Levine:

This patient was a 33-year old white female. She first entered the hospital with complaints of abdominal pain for two years. The pain was generalized and cramping usually appeared in the afternoon and did not last long. She had these attacks frequently. Five days before entrance she had a severe attack and since then the pain had been more or less constant and associated with a feeling of fullness. She had vomited twice in the last five days. The attacks usually ended with a diarrhea and in the last two days her stools had been watery. Tarry stools had never been noticed. The only point of note in the physical examination was tenderness about the umbilicus. Chemical blood was present in the stools. The diagnosis was uncer-

tain but cholecystitis, spastic colitis, pyelitis and renal colic were considered.

X-rays of the gall bladder were negative. A G-I x-ray revealed a high-grade incomplete obstruction of the ascending colon, diagnostic of a cancer.

Two weeks after entrance a laparotomy was performed and a portion of the ascending colon was removed. The specimen was found to be an adeno-carcinoma of the ascending colon with a metastasis to an adjacent lymph node. The operation was a Mickulicz type which left a colostomy which was later cauterized several times and allowed to close. She had two further admissions during the closure treatment and was discharged the last time two months post-operatively in good condition.

She returned again 13 months after the operation for a delivery. Her first pregnancy had ended as a premature stillbirth about 8 years before. At the last admission she was jaundiced and had a large liver, both of two weeks duration. A diagnosis of carcinoma metastases to liver was made. In the last two weeks of pregnancy she had become toxic, vomited, lost weight and had diarrhea and sweating.

The pregnancy was of only seven months duration but labor had started spontaneously and she was delivered with outlet forceps. During labor the patient went into a collapse but recovered under appropriate treatment.

The patient went gradually downhill. Her icterus index rose to 150 and her abdomen became larger. She died about four weeks following delivery. The baby is perfectly healthy, and is now almost 6 months old.

Here is the surgical specimen removed 14 months before her death. The specimen consists of a piece of bowel 21 cm. long and is composed of the lower 5 cm. of the ileum and the cecum with 7 cm. of ascending colon. At the junction of the cecum and ascending colon there is a palpable mass with a slight constriction on the surface of the bowel. Opening the bowel lengthwise reveals that the mass is completely annular. Attached to the outside of the ascending colon there is considerable fat tissue. In this fat tissue there are two palpable lymph nodes which are 8 and 10 mm. in diameter. On sectioning one of these glands has a 3 mm. gray area.

At the autopsy this patient was a fairly well-nourished, white female weighing about 150 lbs. The skin was icteric and the abdomen was much distended, especially in its upper portion. The face and finger tips were cyanotic. On the right side of the abdomen there was an old 20 cm. healed laparotomy scar. The abdominal cavity contained about 1000 cc. of slightly cloudy, yellow fluid. The liver was markedly enlarged and extended to 20 cm. below the xiphoid and 12 cm. below the right costal margin. The lungs had focal areas of consolidation on their cut surfaces. The liver weighed 5070 gms. and its capsule was everywhere studded by innumerable nodules and nodes of light gray, firm tumor tissue which vary from 1 to 10 cm. in diameter. Cut surfaces were everywhere studded by similar nodes of tumor tissue which form a confluent mass and invade and replace a large portion of the liver parenchyma. Many of the nodes were discolored by hemorrhage and bile-stained areas. The intestines show no gross changes thruout except for an old right-sided colectomy for the carcinoma of the colon. There is no evidence of residual tumor tissue or of local recurrence.

Anatomic Diagnosis: Extensive metastases to the liver from a carcinoma of the colon; previous resection of the ileo-cecal region for a carcinoma; old anastomosis between the terminal ileum and the transverse colon; ascites.

There are several interesting facts in a case of this sort. One of the most interesting questions is the effect the pregnancy had on her tumor and I suspect that the pregnancy hastened the growth of the metastases. We do not see this sort of thing very often. It may be that if she had not become pregnant, she might have lived longer. Pregnancy throws the functioning of all organs out of their natural state.

Dr. Gilchrist of the Presbyterian Hospital has made a careful study of specimens resected for carcinoma of the rectum. He found by special methods that microscopic metastases may be much farther from the primary tumor than is ordinarily expected. In some instances he examined as many as 100 draining lymph nodes and sometimes found that half of them were involved with metastases. Many of these lymph nodes are very minute and could easily be missed in the ordinary examination.

With this in mind it is easy to see that all

the local metastases may not have been resected when the primary tumor of this case was removed. Either this occurred and then the tumor spread later to the liver or the tumor cells were already in the liver at the time of the operation. Ordinarily definite liver metastases will show clinically in three or four months. Here it was an interval of about one year.

But one thing that we do know is that in almost every malignant tumor, tumor cells get into the blood and are carried around the body. Most of them die off since they may not find a favorable environment to grow. The liver and the lungs are the best locations and yet it is possible that a great many tumor cells that get into the liver fail to produce a metastatic nodule.

Question: Do not we feel that pregnancy will accentuate any defects in the body?

Dr. V. Levine: Pregnancy probably had a definite effect on the metastases in this case.

DISCUSSION (Dr. R. Johnson)

We watched this woman clinically after she was admitted to the hospital the first time and were rather uncertain as to the diagnosis. It was finally thought best to operate and on getting ready for the operation we came to a decision that we had waited just about one day too long. The operation was scheduled for a certain day, but the day before she passed about a bedpanful of blood during one sitting. She became so weak that we postponed the operation and tried to build her up by giving her blood transfusions.

Upon operating there was no evidence of visible metastases to the liver but I have always felt that such a bleeding allowed a regular shower of tumor cells to go into the venous circulation and be carried along in the blood stream and later find favorable environment in the liver. She had a six-months checkup and x-ray showed nothing abnormal. Clinical findings were negative then. But seven months after that she died.

Case IV

BRAIN ABSCESS FOLLOWING SINUSITIS

DR. V. LEVINE:

This woman was 30 years old and known to be four months pregnant. She had been bothered with sinusitis for some time. While visiting in Ohio she developed such a severe headache that a physician gave her sodium amytal. The next day she seemed relieved of her headache but was somewhat stuporous. On this day she was driven back to Chicago. The next morning, when a physician was called, she was in rather a light coma but seemed to be rousing out of it. She was given supportive measures and coramine to counteract the barbital. At 5:00 P.M., while being given an enema by a nurse, she got suddenly cyanotic and stopped breathing. The doctor, who arrived a few minutes later, found her heart still beating. Artificial respiration, an inhalator, the fire department respirator, intravenous coramine and intracardiac adrenalin failed to revive her.

At the autopsy this patient was fairly well nourished. A small amount of colostrum could be expressed from both breasts. The only thing of real note in the body post was the four-month fetus in the uterus.

When the brain was removed from the skull, it was seen immediately that the right frontal lobe was considerably larger than the left frontal lobe. It was very fluctuant. With a pipette a dark green, mucoid pus was removed. After sectioning you can see there is a large abscess with marked edema about the abscess. That was the essential finding in this case. The only other finding of note was seen on opening the sinuses. The right frontal and anterior ethmoid sinuses were filled with a dark green, mucoid pus. Culture taken of the pus in brain abscess and sinuses showed B. proteus and pneumococcus.

Anatomic Diagnosis: Large abscess in the right frontal lobe of the brain (pneumococcus and B. proteus); marked edema about the abscess; right frontal and ethmoid sinusitis; four month intrauterine pregnancy.

Question: Was there any odor to the pus?

Dr. V. Levine: Sweet smelling odor altho not exactly the odor of a culture of B. proteus.

There are several points of interest to this case. The first question is the possibility of amytal poisoning. Poisoning with barbiturates or barbital can produce encephalitis with symptoms similar to that seen here. If it had been a barbital poisoning, it would, strictly speaking, not be a coroner's case since ill effects of medicine given in the usual doses are not considered coroner's cases. The second point of interest is the question of the relation of the sinusitis to the brain abscess. The dura was slightly adherent to the bone over the involved sinuses and also adherent over the abscess. This makes one

feel that there probably was a direct spread or a spread by lymphatics. On the other hand it is also possible that the infected sinuses weakened the resistance of the adjacent brain and thus made it easy for the organisms to settle down in the brain from the blood during a possible stage of septicemia originating from the very bad sinuses.

Another question that could be raised is what effect would her trip have on the brain abscess? The chances are that she had the abscess for several weeks or even several months. The trip, of course, aggravated the brain abscess and undoubtedly lighted it up and lead to her sudden death. It is impossible to tell exactly the age of the abscess because an abscess in the brain does not form a definite pyogenic membrane on its wall.

DISCUSSION (Dr. R. Johnson)

This patient took a trip to Ohio about three weeks before her last trip. On both these trips the apparent sinusitis flared up. On the first trip she apparently recovered completely and then returned to Chicago. She was only home one week when she wanted to go back to Ohio. When I was called to see her on the day of her death she was practically unconscious and an examination of the nose showed nothing at that time indicative of an active sinusitis. Thus at the moment there was nothing to suspect as the cause of her coma except perhaps an overdose of medicine. The family stated that she had had a headache over the right frontal region for five days and it was so severe that they were afraid to bring her back to Chicago. After the apparent improvement from the medicine they then started back by auto. The family stated that they had not given her any medicine after she came home. That morning, before they called me, she had been able to drink water and was answering questions. She appeared to be improving and every one thought that she was coming out of the stupor caused by the medicine.

Question: Were there any dizziness, vomiting or unusual eye signs?

Answer: None were noted.

Question: Is it possible to have a condition like this for several years?

Dr. V. Levine: Brain abscesses have been known to exist for 40 years and eventually lead to the death of the patient. The longest one that I, myself, have seen was present for 16 years.

MEDICAL DIVISION OF CIVILIAN DEFENSE OFFICE ISSUES BULLETIN NO. 2

The thoroughness with which the Medical Division of the Office of Civilian Defense is preparing to meet civilian emergency needs associated with disasters is shown in the Division's Bulletin No. 2, published in the November 22 issue of *The Journal of the American Medical Association.* This bulletin concerns itself with the equipment and operation of Emergency Medical Field Units.

The bulletin explains that an emergency medical field unit is "a group of physicians, nurses, orderlies and volunteer nurses' aides organized, equipped and trained for field casualty service in the event of a disaster."

This unit operates from what is known as a casualty station and is so organized and equipped that it can be instantly subdivided into squads and teams for service at the actual site of disaster.

The recommended equipment listed in the bulletin is uniform and conforms as far as possible with that of the Medical Department of the U. S. Army. In addition to listing the minimum medical and surgical equipment for the first aid post, which is the advance unit of the casualty station, the equipment for the latter also is enumerated. For the first aid post the working supply for one physician's team includes the instruments essential for minor surgery, drugs, dressings and bandages and suture material. The equipment for a casualty station includes bulky articles such as splints, which could not be included in the equipment of the first aid post without impairing its mobility and other items, such as matches, electric lanterns and gasoline stoves, as well as the drugs, dressings and bandages required for its efficient operation.

A bookplate often assures the return of a borrowed volume. As Sir Walter Scott says:

"I find that although many of my friends are poor arithmeticians they are nearly all good bookkeepers."

NOT THAT BAD

The expectant father was pacing up and down the hospital corridor when the nurse came out and informed him that his wife had just given birth to a bouncing nine-pound boy. The father did not seem pleased, did not say anything — just continued his pacing up and down. The nurse was considerably taken aback by this unusual behavior and said:

"Well, aren't you happy about the baby, and don't you want to know how your wife is?"

"No," was his reply, "you see we haven't been on speaking terms for over a year."

"But — but, what about the baby?" she stammered.

"Well, you see, we just never got that mad."

—*Tarrant County.*

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

DR. CHARLES H. PHIFER APPOINTED 6th CORPS AREA CHAIRMAN

The December 27th Journal of the American Medical Association made the following announcement: "At a meeting in Chicago of the Board of the Procurement and Assignment Service with the Committees on Medical Preparedness of the American Medical Association, the American Dental Association, and the American Veterinary Medical Association, a definite organization was completed for the functioning of this service in relationship to needs of professional personnel in the war."

"Approval was given to the constitution of Committees in each of the corps areas and associated naval districts to function as advisory to the corps area commander, the committee to consist of a chairman who will be the corps area representative of the Committee on Medical Preparedness of the American Medical Association."

Dr. Charles H. Phifer, President of the Illinois State Medical Society was appointed Chairman for the Sixth Corps Area.

James P. Greenhill gave the Samuel D. Gross Lecture at the Louisville City Hospital on December 16. His subject was "Newer Aspects of Endocrine Therapy in Obstetrics and Gynecology."

Philip A. Halper presented the scientific program at the Milwaukee Oto-Ophthalmic Society on December 9th. The subject was "The Cross Cylinder in Ophthalmology."

Greene County Medical Society held its annual meeting and election of officers at Roodhouse on December 12. Dr. George L. Drennan spoke on "Medical Management of Poliomyelitis" and Dr. Harold Bowman on "Orthopedic Management of Poliomyelitis." The following officers were elected — Dr. N. J. Bucklin of Roodhouse, President; Dr. S. F. March, Vice-President; Dr. Wm. H. Garrison, Secretary and Dr. R. W. Piper, Censor.

The Educational Committee received a letter from a teacher in one of the larger high schools in the northern section of the state in which she stated, "We post your weekly bulletins on our bulletin board and knowing what is in each article is part of the requirement for our freshman hygiene classes for girls. These articles are very interesting and instructive."

Dr. Edwin S. Hamilton, Kankakee, Chairman of the Council of the Illinois State Medical Society, was recently appointed by Gov. Dwight H. Green, as a member of the Medical Department of Registration and Education. Doctor Hamilton has been a busy practitioner in Kankakee for many years and by virtue of his training and experience will be a valuable member of this highly important committee.

O. E. Van Alyea addressed the Omaha-Douglas County Medical Society at Omaha, December 9, 1941. His subject was "The Acute Nasal Infection."

NATIONAL CONFERENCE ON MEDICAL SERVICE

The Annual Meeting of the National Conference on Medical Service will be held at the Palmer House, Sunday, February 15th from

9:00 A. M. to 5:00 o'clock. Harold M. Camp, M. D., President and J. D. McCarthy, M. D., Omaha, Secretary announce that the program will be devoted to discussions of medical preparedness and national defense. All doctors are cordially invited to attend.

COMING MEETINGS

January 5 — Hancock County — Farm Bureau Building, Carthage, 7:30 P. M. — Election of Officers. Walter Stevenson — "Eye Conditions."

January 6 — Bureau County — Perry Memorial Hospital, 6:30, Princeton. Edward Allen — "Obstetric Hemorrhage."

January 8 — Union County — Anna, Evening meeting — "Infections of the Hand."

January 13 — Bureau County — Princeton Hospital, Princeton — 6:30 P. M. A. Verbrugghen — "What Not to Do in Injuries of the Nervous System."

January 13 — Effingham County — Benwood Hotel, Effingham, 6:30 P. M. H. E. Moss — "The Acute Abdomen."

January 16 — Will-Grundy County — Louis Joliet Hotel, 12:00 Noon — James T. Case — "X-Ray Aid in the Diagnosis of Gallbladder and Liver Conditions."

January 23 — Will-Grundy County — Louis Joliet Hotel, 12:00 Noon — Robert S. Berghoff — "Rheumatic Heart Disease."

January 30 — Will-Grundy County — Louis Joliet Hotel, 12:00 Noon —

February 3 — Bureau County — St. Margaret's Hospital, Spring Valley, 6:30 P. M. Charles Galloway — "Prevention of the Toxemias of Pregnancy."

MARRIAGES

William Francis Jacobs to Miss Mary Margaret Haskins, both of Chicago, in October.

DEATHS

Marion Albert Andreen, Chicago; Northwestern University Medical School, Chicago, 1922; associate in otolaryngology at his alma mater; member of the American Board of Otolaryngology; aged 47; died, November 10, at the South Shore Hospital of carcinoma of the gallbladder and cerebral thrombosis.

Archie W. Barker, Springfield; Barnes Medical College, 1898; aged 74; died December 4, 1941.

Thomas Francis Birmingham, Galesburg, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; member of the American Urological Association; president-elect of the Knox County Medical Society; aged 58; on the staffs of the Galesburg Cottage Hospital and St. Mary's Hospital, where he died, November 1, of cirrhosis of the liver.

Charles Henry Buchanan, Chicago; Rush Medical College, Chicago, 1876; aged 90; died, November 12.

James Homer Butler, Lincoln, Ill.; Missouri Medical College, St. Louis, 1899; member of the Illinois State Medical Society; on the staffs of the Evangelical Deaconess Hospital and St. Clara's Hospital; aged 66; died, October 31, of carcinoma of the sigmoid.

Charles Clinton Cooley, Chicago; Jenner Medical College, Chicago, 1915; also a dentist; aged 60; died, October 12, in Warrenville, Ill., of coronary thrombosis.

Eli George Davis, Lewistown, Ill.; Kentucky School of Medicine, Louisville, 1881; member of the Illinois State Medical Society; aged 88; died, November 11, in the Graham Hospital, Canton, of hypostatic pneumonia.

Anton Otto Frana, Chicago; Jenner Medical College, Chicago, 1917; member of the Illinois State Medical Society; served during the World War; on the courtesy staff of the Evangelical Hospital; aged 56; died, November 18.

Emery Wells Goembel, Rockford, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; aged 60; on the staff of St. Anthony's Hospital, where he died, November 1, of coronary thrombosis.

Wallace K. Harrison, Chicago; University of Illinois College of Medicine; retired; aged 93; died December 7, 1941.

Samuel Hirsch, LaSalle; Jenner and Rush Medical Colleges; 1899; aged 79; died December 14, 1941.

Lewis J. Isaacs, Chicago; University of Illinois College of Medicine, 1894; aged 67; died of heart disease December 13, 1941.

James T. Leigh, Du Quoin, Ill.; Missouri Medical College, St. Louis, 1882; member of the Illinois State Medical Society; on the staff of the Marshall Browning Hospital; aged 83; died, October 30, of senility.

John H. McCain, Arcola; University of Louisville School of Medicine, 1891; Dr. McCain was a member of the Douglas County Medical Society, the Masonic Lodge and the Baptist Church. Died Nov. 24, 1941, aged 72.

Thomas Jefferson McDaniel, Plymouth, Ill.; Rush Medical College, Chicago, 1886; aged 81; died, November 17, in St. Francis Hospital, Macomb, of bronchopneumonia.

W. D. McDowell, Chicago; University of Illinois College of Medicine; on staff of Garfield Park Hospital; died in the Pueblo Hospital, Colorado, October 13, 1941 of Bronchial Pneumonia, aged 79.

Grant Fletcher Mollring, assistant surgeon, lieutenant, junior grade, United States Navy, Great Lakes, Ill.; University of Nebraska College of Medicine, Omaha, 1936; was appointed assistant surgeon in the medical corps of the United States Navy on Oct. 25, 1940; formerly served with the 10th Provisional Company of the United States Marine Corps at Quantico, Va., and also for a time at one of the new Atlantic bases; at one time surgical assistant at the Parkview Hospital, Rocky Mount, N. C.; aged 27; died, October 27, at the United States Naval Hospital; of acute anterior poliomyelitis.

Walter D. Murfin, Decatur; University of Illinois College of Medicine, 1910; Dr. Murfin was a member of Macon County Medical Society, the American Legion, the Masonic lodge No. 613 at Patoka, and the Westminster Presbyterian Church. He was 54 when he died on December 10, 1941.

Ezra E. Osborne of Broughton, Illinois, aged 58, died as the result of an automobile accident Monday, December 1, 1941. He was a graduate of the St. Louis College of Physicians and Surgeons, 1904.

Lieut. Richard Rall, Chicago; Loyola University School of Medicine; commissioned by navy in 1936, Naval Medical Corps stationed in Hawaii; aged 32; died December, 1941.

Maurice Schneider, Chicago; Northwestern University Medical School, 1928; Associate Professor of pediatrics at the Cook County School of Medicine; died December 2, 1941.

Richard A. Stark, Chicago; Jenner Medical College, Chicago, 1908; served during the World War; aged 55; died in October.

Albert Frank Streuter, Arenzville, Ill.; Northwestern University Medical School, 1906; aged 66; died December 17, 1941.

Winsor W. Warriner, Antioch, Illinois; Northwestern University Medical School, 1903; aged 68; died November 30, 1941.

Anthony Thomas Weber, Chicago; National Medical University, Chicago, 1907; veteran of the Spanish-American and World wars; formerly on the staffs of the Veterans Administration Facility in Hines, Ill., and Tucson, Ariz.; aged 64; died in October of coronary occlusion.

Clarence H. Wieneke, Chicago; University of Illinois College of Medicine, 1912; aged 51; died December 15, 1941.

William K. Yorks, Chicago; Hering Medical College, 1900; aged 75; died November 26, 1941.

DO YOU KNOW

That many cases of typhoid fever are caused by apparently healthy humans who carry the germs in their intestinal and urinary tracts and who are careless in the handling of foods?

That typhoid fever is now rarer in the United States Army than in most healthful cities and towns and that this is true because all soldiers are vaccinated against typhoid?

That typhoid vaccine is made from dead typhoid fever germs and that the vaccination is harmless?

That typhoid vaccination ordinarily protects one against the disease for from two to three years?

That those definitely exposed to typhoid infections should be revaccinated frequently?

That after World War I the death rate from typhoid fever dropped most among men between the ages of twenty-one and thirty-five (draft ages)?

That raw foods, unclean milk, sewers, poorly constructed privy vaults, and human excreta left on the ground to drain into water systems, are common sources of typhoid infection?

That typhoid fever can be controlled by the use of pure water, pasteurized milk, clean foods, proper sewage disposal and by the general practice of anti-typhoid vaccination?

That in preparing for a vacation you should select a place where drinking water and milk supply are pure, and when camping it is always best to boil drinking water unless you know that it is pure?

That travelers to doubtful sections of the world should fortify themselves by vaccination before leaving home?

More than 24 million patient days were spent in tuberculosis hospitals during 1939 according to a special report of the Census Bureau. Vital Statistics, Bureau of Census, September 15, 1941.

The public looks to the physicians as leaders in things pertaining to health, and it will accept our judgment as the final word in health matters if we are ready with practical and sound material when such advice is sought. We had better produce.—Bulletin of The Columbus Academy of Medicine, Ohio.

In the past a frequent complaint from mothers was the expense incurred when the large bottle of antiricketic was accidentally upset.



OLEUM PERCOMORPHUM

Even if the bottle of Oleum Percomorphum is accidentally tipped over, there is no loss of precious oil nor damage to clothing and furnishings. The unique Mead's Vacap-Dropper* is a tight seal which remains attached to the bottle, even while the antiricketic is being measured out. Mead's Vacap-Dropper offers these extra advantages also, at no increase in price:

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Mead's Vacap-Dropper will not break even when bottle is tipped over or dropped. No glass dropper to become rough or serrated.

No "messiness"

Mead's Vacap-Dropper protects against dust and rancidity. (Rancidity reduces vitamin potency.) Surface of oil need never be exposed to light and dust. This dropper cannot roll about and collect bacteria.

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This unique device, after the patient becomes accustomed to using it, delivers drops of uniform size.

No deterioration

Made of bakelite, Mead's Vacap-Dropper is impervious to oil. No chance of oil rising into rubber bulb, as with ordinary droppers, and deteriorating both oil and rubber. No glass or bulb to become separated while in use.

How to Use MEAD'S *Vacap-Dropper*

Remove both top and side caps. Wipe dropper tip. Place forefinger firmly over top opening and regulate rate of flow by varying the degree of pressure. Oleum Percomorphum is best measured into the child's tomato juice. This is just as convenient and much safer than dropping the oil directly into the baby's mouth, a practice which may provoke a coughing spasm.



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The Problem

OF NUTRITION IN GERIATRICS

The declining physical activity of senescence has created in the minds of many aged persons the erroneous belief that dietary curtailment is desirable. Yet modern authorities assert that nutritional requirements, with the exception of caloric fuel value, do not decrease with advancing age. Their satisfaction is necessary if vigor, good health, and normal freedom from infectious disease are to be maintained.

The one-sided, usually inadequate diet of many aged persons can be readily balanced with New Improved Ovaltine. This delicious food drink provides nutrients likely to be lacking, and supplies them in easily assimilated form. Ovaltine puts little tax on the digestive apparatus; its pleasing palatable taste rarely loses its appeal.

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FAT	3.15 Gm.	31.95 Gm.
CALCIUM	0.25 Gm.	1.05 Gm.
PHOSPHORUS	0.25 Gm.	0.903 Gm.
IRON	10.5 mg.	11.9 mg.
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VITAMIN A	1500 U.S.P.U.	2953 U.S.P.U.
VITAMIN D	405 U.S.P.U.	432 U.S.P.U.
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**J.A.M.A., 93:1110, October 12, 1929*
Bruckner, Die Biochemie des Tabaks, 1936
***The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941*

A RECENT ARTICLE by a well-known physician in a national medical journal presents new and important information on the subject of cigarette smoke and the burning rate of cigarettes. A comprehensive bibliography is included. Let us send you a reprint of this article for your own inspection. Write to Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

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A New Study

COCOMALT AS SUPPLEMENTARY NOURISHMENT IN TUBERCULOSIS



Clinical Material — Controlled observations* of 118 cases of pulmonary tuberculosis over a period of 12 to 20 weeks.

Controls — COCOMALT tested against milk alone or cocoa flavored milk for supplementary nourishment.

Results

	WEIGHT INCREASE	HEMOGLOBIN INCREASE
COCOMALT Test Group . . .	50%	48%
Control Group . .	21%	27%

Note that the percentage of patients gaining weight in the test group was more than twice that in the controls.

8-10 WEEKS AFTER THE STUDY WAS CONCLUDED, additional checks were made on several patients. Results—none of the COCOMALT test group showed any significant gain in weight following *discontinuation* of the enriched food drink.

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*Matsuzawa, D; Boyd, L. J.
New York Medical College and
Flower Hospital Bulletin—Dec. 1941.

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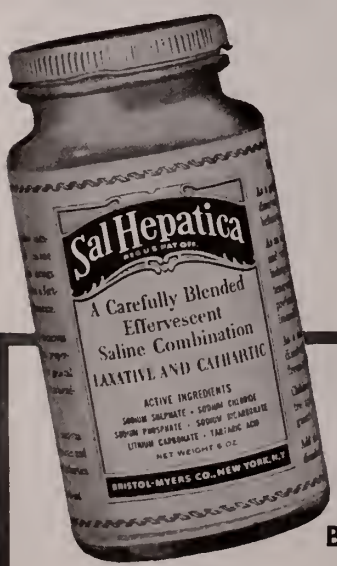
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Sal Hepatica, taken with plenty of water, is particularly indicated in constipation due to insufficient water intake. The solution of Sal Hepatica, through osmotic equilibrium, forms *liquid bulk* in the "arid" intestines for gentle flushing of the bowel and activation of peristalsis. Mildly alkaline Sal Hepatica often alleviates simple gastric disturbances and brings about an increased bile flow.

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**Facts from: Proc. Soc. Exp. Biol. & Med., 1934, 32, 241-245; N. Y. State Jrl. of Med. Vol. 35, No. 11,590; Arch. of Otolaryngology, Mar. 1936, Vol. 23, No. 3,306.*

Book Reviews

A Textbook of Pathology. Edited by E. T. Bell, M.D. Contributors, E. T. Bell, M.D., Professor of Pathology, B. J. Clawson, M.D., Professor of Pathology, and J. S. McCartney, M.D., Associate Professor of Pathology, University of Minnesota, Minneapolis, Minn. Fourth Edition. Published 1941 Lea & Febiger, Philadelphia, Pa. Price $9.50.

This standard work has been thoroughly revised and enlarged since the last printing. Now, the volume includes a large amount of new material and references to the latest literature published in this field. The text is in accord with present medical thought, but the contributors have maintained a conservative attitude toward controversial subjects.

The object of this volume is to furnish the medical student with a text book which he may use during training, and later as a practical reference book. The illustrations are original and the data is presented concisely and in an orderly and accessible fashion. The student will find the work valuable, and the practitioner will enjoy a handy reference book for his library.

Professional Adjustments I., By Gene Harrison, A.B., R.N., Educational Director, Druid City Hospital School of Nursing, Tuscaloosa, Alabama. The C. V. Mosby Company, St. Louis. Price $2.25.

It must be remembered that Nurse Harrison has compiled this material for the student nurse, or even perhaps the pre-student considering nursing as a profession. "Ethics" are an important part of every nurses' life, and a vital part of her success or failure as such. The material is presented simply and in a manner easily assimilated by the eighteen year old mind.

We can, perhaps, recommend this little handbook for the probationer or the first year student for use in developing the "nursing personality."

The Art and Science of Nutrition. By Estelle E. Hawley, Ph.D., and Grace Carden, B.S., The University of Rochester, School of Medicine and Dentistry, Rochester, N. Y. The C. V. Mosby Company, St. Louis. Price $3.50.

This volume has been prepared to call attention again to the fact that nutrition plays an important part in medicine. This may be used as a handbook for nurses in planning and suggesting meals in connection with dietary treatment prescribed by a physician.

In the nursing profession, there is a real need for scientific knowledge of food, its preparation, uses, and consequences. The book has been compiled in four principal parts: Normal Nutrition; Food Requirements Under Special Conditions; Diet Therapy; and The Choice, Preparation, and Serving of Foods.

Synopsis of Applied Pathological Chemistry. By Gerome E. Andes, M.S., Ph.D., M.D., and A. G. Eaton, B.S., M.A., Ph.D. The C. V. Mosby Company, St. Louis, Mo.

This book was written to provide information concerning the chemistry of the body fluids and their alterations in various diseased conditions. More than half of the subject matter relates to the chemistry of the blood in both health and disease.

The usual tests for blood chemistry determinations are described in detail even though the authors endeavor to give much of this valuable information in condensed form to eliminate unnecessary reading.

The second part is devoted to chemistry of the cerebrospinal fluid giving the methods of making the various determinations in the abnormal cerebrospinal fluid.

In the third part of the book, chemistry of urine is discussed in detail and the more popular tests for urinary analysis are given, including tests for various drugs. Functional tests such as renal, liver and the endocrine glands to show normal or abnormal conditions are presented in condensed form.

The various techniques in doing gastric analyses and an interesting chapter on basal metabolism appear in the final chapter.

An appendix outlines the preparation of reagents and standard solutions used in this field, to give for quick reference such information as is frequently

(Continued on page 34)



Protective Barrier

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BOOK REVIEWS (Continued)

desired by the student or busy practitioner. A considerable amount of often desired information will be found in this small volume.

THE MODERN TREATMENT OF SYPHILIS. By Joseph Earle Moore, M.D., Associate Professor of Medicine, The Johns Hopkins University; Physician-in-charge Syphilis Division of Medical Clinic and Visiting Physician, The Johns Hopkins Hospital, Baltimore; Special Consultant, United States Public Health Service. With the collaboration of Jarold E. Kemp, M.D., Harry Eagle, M.D., Paul Padget, M.D., Mary Stewart Goodwin, M.D., of whom all are members of the faculty of The Johns Hopkins University. Charles C. Thomas, Publisher, Springfield, Illinois, and Baltimore, Maryland. Price $7.00.

The first edition of this book was published in 1933, and the new edition describes in much detail the many advances in syphilography in the past eight years.

The author and his collaborators have all been coworkers as members of the faculty of the Johns Hopkins University. The material in this new edition is based upon an experience with more than 35,000 cases of syphilis, over 200,000 bismuth injections and more than 15,000 mercury sulphide injections.

The chapter on the prognosis of syphilis should be of interest to every physician who treats the disease and gives much information based upon clinical data accumulated by many syphilographers.

A MANUAL OF BANDAGING, SPLINTING AND STRAPPING. By Augustus Thorndike, Jr., M.D., Philadelphia. Lea & Fegiger, 144 pages, illustrated. Paper, $1.50.

Augustus Thorndike, who has wide experience at Harvard, has written a very useful, handy, and complete handbook on bandaging, splinting and strapping.

The material contained in this little book is extremely useful for medical students, nurses, and the young practitioner.

PRACTICAL METHODS IN BIOCHEMISTRY. By Frederick C. Koch, Frank P. Hixon, Distinguished Service Professor of Biochemistry, University of Chicago. The Williams & Wilkins Company, Baltimore. Price $2.25.

This is the third edition of the book, originally published in 1934, and it is intended to be used as a laboratory manual for medical students to give them the more important qualitative and quantitative chemical aspects of cell constituents, cell activity and composition of blood, secretions and excretions.

The subject matter is divided into three parts:

(1) The chemistry of cell constituents. (2) The chemistry of the digestive tract. (3) Blood and urine.

Much information for the student will be found in this book and in the appendix, all in considerable detail. Standard solutions and reagents are discussed and instructions for their preparation are outlined.

The book should be of great interest to the medical student and to the laboratory technician.

OUTLINES OF INDUSTRIAL MEDICAL PRACTICE. By Howard E. Collier, M.D. (Edin.) Ch.B. Formerly reader in Industrial Hygiene and Medicine, University of Birmingham. The Williams & Wilkins Company, Baltimore. Price $5.00.

In recent years more attention than ever before has been given to the consideration of industrial health. This book was originally intended to become a textbook of Industrial Medicine, especially for those physicians who are engaged in any of the modern types of industrial practice. The subject matter is divided into four main sections: (1) Industrial Hygiene. (2) Industrial Psychology. (3) Industrial Disease. (4) Forensic Medicine.

The author, on account of war conditions in his native country, revised his plans and has endeavored to show the unusual attention which should be given to the health of the industrial workers in time of war. He states that in the effort to stimulate production, too often inadequate attention is given to the state of health of the workers.

In his many considerations of the field of hygiene in industry, much information is given relative to the protection of the health interest of the workers. This is not a book which gives information on treatment of industrial medical and surgical conditions, but it does give much valuable information for the man doing full or part time work in industrial medicine that he may safeguard the health of workers. In the present "all out" emergency, this book should prove valuable, and a worthy addition to the library of any physician engaged in this line of work.

CANCER OF THE FACE AND MOUTH. Diagnosis, Treatment, Surgical Repair. By Vilray P. Blair, M.D., Sherwood Moore, M.D., and Louis T. Byars, M.D., St. Louis. The C. V. Mosby Company, 1941. St. Louis. Cloth $10.00.

The prominence of these men in their chosen fields of medicine, assures the reader that he will find authoritative date and careful judgments in this new book. The material presented here is keenly organized and affords easy accessibility for anyone desiring immediate information. The material is considered under thirteen subdivisions in the same number of chapters. There are abundant illustrations which afford photographs taken before and after treatment.

(Continued on page 36)



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BOOK REVIEWS (Continued)

In addition and of especial interest to the surgeon is the appendix which depicts the operation performed in each of the many photographed cases. By using this method of presentation, the reader can follow the patient before treatment, through the operation to the end results shown photographically.

There are follow up statistics which are of especial value from the standpoint of prognosis of the various types of cancer of the face and mouth. This material will prove valuable to surgeons, roentgenologists or dermatologists treating or advising patients with cancer of the face or mouth. Naturally the general practitioner, to whom these patients come first, will find a wealth of material and information for his guidance in this publication.

MODERN DRUGS IN GENERAL PRACTICE. By Ethel Browning, M.D. Williams & Wilkins Company, Baltimore. Price $3.00.

The author presents a very comprehensive study of much that is new in this field. There are chapters dealing with the sulphonamides, gold salts, cardiac drugs, drugs action on the autonomic nervous system, sedatives and hypnotics, diuretics and urinary antiseptics, gastrointestinal remedies, and also external applications including local anesthetics.

The important field of the sulphonamides is well covered, and particularly emphasized. Many other modern drugs are discussed as to their clinical indications, therapeutic importance, toxic action and methods of use. The little volume is an excellent survey of the newer drugs, and will prove especially "handy."

Books Received

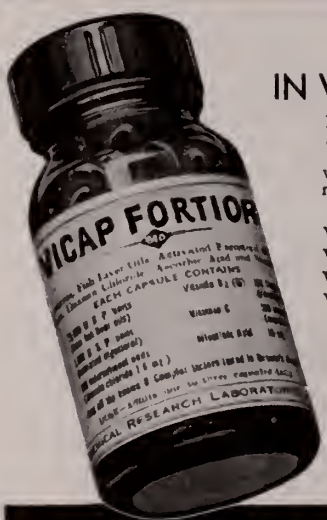
The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

TREATMENT OF THE PATIENT PAST FIFTY. By Ernst P. Boas, M.D., Associate Physician, Mount Sinai Hospital, New York City; Chairman, Committee on Chronic Illness, Welfare Council of New York City; Assistant Clinical Professor of Medicine, Columbia University. The Year Book Publishers, Inc., Chicago. Price $4.00.

THE TOXEMIAS OF PREGNANCY. By William J. Dieckmann, M.D., Associate Professor of Obstetrics and Gynecology, The University of Chicago; Attending Obstetrician, The Chicago

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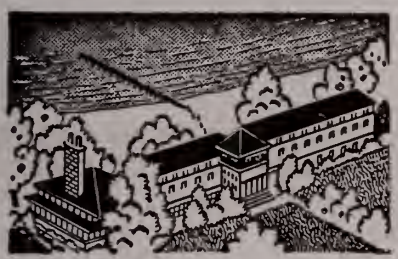
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Lying-in Hospital and Dispensary; Attending Gynecologist, Albert Merrit Billings Memorial Hospital of the University of Chicago; Associate Editor of the American Journal of Obstetrics and Gynecology; Co-Chairman of the Conference on Eclampsia, United States Department of Labor, Children's Bureau, 1941. The C. V. Mosby Company, St. Louis. Price $7.50.

IMMUNOLOGY. By Noble Pierce Sherwood, Ph.D., M.D., F.A.C.P., Professor of Bacteriology, University of Kansas, and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas. The C. V. Mosby Company. Price $6.50.

SYNOPSIS OF GENITOURINARY DISEASES. By Austin I. Dodson, M.D., F.A.C.S., Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. The C. V. Mosby Company, St. Louis. Price $3.50.

SYNOPSIS OF ALLERGY. By Harry L. Alexander, A.B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of the Journal of Allergy. The C. V. Mosby Company. Price $3.00.

SURGICAL PRACTICE OF THE LAHEY CLINIC, Boston, Massachusetts. W. B. Saunders Company, 1941. 897 pages with 376 illustrations. Price $10.00.

MEDICAL CLINICS OF NORTH AMERICA. Symposium on Military Medicine. November, 1941. 418 pages with 50 illustrations. Paper, $12.00 per Clinic Year; Cloth, $16.00 per Clinic Year. W. B. Saunders Company, Philadelphia.

ARTHRITIS IN MODERN PRACTICE. By Otto Steinbrocker, B.S., M.D., Assistant Attending Physician and Chief, Arthritis Clinic, Bellevue Hospital, Fourth Medical Division, New York City. With Chapters on Painful Feet, Posture and Exercises, Splints and Supports, Manipulative Treatment and Operations and Surgical Procedures by John G. Kuhns, A.B., M.D., F.A.C.S., Chief of the Orthopedic and Sur-

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gical Service, Robert Breck Brigham Hospital; Assistant Visiting Orthopedic Surgeon, Boston Children's Hospital. 606 pages with 321 illustrations. Philadelphia and London: W. B. Saunders Company, 1941. Price $8.00.

THE MARCH OF MEDICINE, New York Academy of Medicine Lectures to the Laity, 1941. Columbia University Press, 1941. Price $2.00.

PATHOLOGY AND IMMUNOLOGY, THE 1941 YEAR BOOK OF, Edited by Howard T. Karsner, M.D., and Sanford B. Hooker, A.M., M.D. The Year Book Publishers, Inc., Chicago. Price $3.00.

STANDARD BODYPARTS ADJUSTMENT GUIDE, Traumatic Cases, Occupational Diseases, Disability Evaluations, Medical Fees, Statutory Digests. Copyright 1941 by Insurance Statistical Service of North America, Chicago, Illinois. Single Copy, $15.00 including ten years' revision service.

MEDICAL DISEASES OF WAR. By Sir Arthur Hurst, M.A., D.M., Oxon., F.R.C.P., Lecturer on Clinical Medicine, University of Oxford, and consulting physician to Guy's Hospital; With the cooperation of H. W. Barber, M.A., M.B., Cantab., F.R.C.P.; H. B. F. Dixon, M.C., M.D., Dub., D.T.M. and H., F.R.C.P.; F. A. Knott, M.D., Lond., M.R.C.P.; T. A. Ross, M.D., Edin., F.R.C.P.; and Arnold W. Stott, M.A., Cantab., F.R.C.P. The Williams & Wilkins Company, Baltimore. Price $5.50.

THE DOCTORS MAYO. By Helen Clapesattle. The University of Minnesota Press, Minneapolis. Price $3.75.

MEDICAL CLINICS OF NORTH AMERICA. November, 1941. Symposium on Military Medicine. The W. B. Saunders Company Philadelphia.

BEHIND THE MASK OF MEDICINE. By Miles Atkinson, M.D. Charles Scribner's Sons, New York. Price $3.00.

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FIND ALCOHOL PLAYS BIG ROLE IN PEDESTRIAN TRAFFIC DEATHS

Study Shows That 30.7 Per Cent of Victims Were Under the Influence of Alcohol At The Time They Were Killed

The intoxicated pedestrian is as important a factor as the drunken driver in the problem of highway safety, Thomas A. Gonzales, M.D., and Alexander O. Gettler, Ph.D., New York, conclude from a study, reported in *The Journal of the American Medical Association* for November 1, of the alcohol content of the brains of 3,471 persons killed in vehicle accidents in New York City during the period from Jan. 1, 1928 to Dec. 31, 1937.

They found that 1 motor vehicle driver was killed to every 11 pedestrians and that 30.7 per cent of the latter were under the influence of alcohol at the time of their deaths.

The two investigators point out that considerable attention has been paid to the effect of alcohol on the driving efficiency of the operators of motor vehicles, but that with two exceptions no study has been made regarding the relation of alcohol to fatal and nonfatal accidents involving pedestrians.

The brain was used by the two men because, as they point out, the alcohol content of the stomach and intestine is of no value as an index of intoxication because alcohol has no effect on the person until absorbed into the blood. They found that when the brain of the victim was not available the liver could be used but cautioned that the alcohol content of the latter may be a little higher during the first hour of the period of absorption of the alcohol into the system or somewhat lower during the period immediately following the absorption process. The difference between the brain and the liver is rarely more than 0.05 per cent, they say, and between the second, third and fourth hour after the last drink has been taken the alcohol content of the brain and the liver are practically the same. In living persons the spinal fluid or the blood is preferred by the two investigators as a test medium to that of urine or the breath.

"According to our studies," the two New Yorkers say, "persons having a brain alcohol content of 0.25 per cent or more showed definite evidences of intoxication. By the term 'intoxication' is meant unstable equilibrium, disturbances of the various faculties and incoordination resulting in a staggering gait. . . . It is common knowledge that one person may become 'dead drunk' from a given quantity of whisky while another person from the same quantity may show little or no effect. It is exactly for this reason that we are not concerned with how much alcohol the person has consumed nor how much is present in the gastrointestinal tract (stomach and intestines) but emphasize that the brain or liver must be used for analysis in fatal cases. . . ."

They classify the alcohol content of the brain as follows: 1 plus, denoting 0.02 to 0.1 per cent; 2 plus, 0.1 to 0.25 per cent; 3 plus, 0.25 to 0.40 per cent, and 4 plus, 0.40 to 0.60 per cent.

Of 2,472 pedestrians in fatal automobile accidents, 4.5 per cent were found to be 1 plus, 8.4 per cent were found to be 2 plus, 16.0 per cent were found to be 3 plus and 1.8 per cent were found to be 4 plus. The percentage of those under the influence of alcohol was 30.7.

Of 421 pedestrians in fatal elevated or subway train accidents, it was found that 54.9 per cent were under the influence of alcohol. Of 214 drivers of passenger cars it was found that 56.5 per cent were under the influence of alcohol and of 44 chauffeurs of trucks, 9.1 per cent were under the influence of alcohol.

From the ratio of drivers to pedestrians, the investigators say that "it is obvious that the driver is much better protected than the pedestrian and therefore less liable to fatal injuries. The greater percentage of brain alcohol content in intoxicated drivers who have met with fatal accidents may be accounted for by the smaller number of total fatalities in the drivers."

In their conclusions from the study the two New York men say that "In evaluating the public health and medicolegal implications of highway accidents, the relation of alcohol to pedestrian deaths should not be ignored. The greater number of pedestrian fatalities as compared with the driver deaths and the results which indicate that 30.7 per cent of the

(Continued on page 44)

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pedestrians were under the influence of alcohol and that 26.2 per cent had an alcohol content of 2 plus or more, emphasize the importance of this observation. Negligence on the part of the intoxicated pedestrian is also an important factor. The decreased inhibitions, deficient sense of care, impaired reaction time and slow response to stimuli of the intoxicated pedestrian tend to create a disregard for safety and for the proper observance of traffic regulations.

"While this investigation was conducted in a city the population of which represents only a small proportion of the total population of the country, the figures obtained should be fairly representative of conditions in other large communities and should stimulate similar investigations elsewhere.

"Furthermore, the results of the investigations would be valuable in conjunction with other public health educational efforts in the reduction of fatal and nonfatal traffic accidents."

SAY OUTLOOK FOR CORONARY THROMBOSIS IS GENERALLY QUITE FAVORABLE

A ten year analysis of the after-history of 200 patients with coronary thrombosis (obstruction by blood clots of the arteries supplying blood to the heart muscle) indicates a favorable outcome in a larger percentage of cases than is generally appreciated, Edward F. Bland, M.D., and Paul D. White, M.D., Boston, report in *The Journal of the American Medical Association* for October 4. The two men point out that although particularly encouraging reports of special instances of an unusual longevity of seventeen to thirty-seven years have been made occasionally, the implication for the majority of patients with coronary thrombosis has been still far from comforting. They report on the history of 200 patients seen by them between 1920 and 1930.

"Of the entire series," they say, "38 (19 per cent) died during the first four weeks after their initial attack. . . . Approximately one third (34 per cent) of the 162 patients who survived the acute attack recovered completely, in that they were able to carry on without cardiac (heart) symptoms. . . . The course of this group was the most favorable; more than half (56 per cent) survived the first decade. Of those who died after temporary 'complete' recovery, coronary insufficiency accounted for most of the deaths. . . . Of the 18 patients who succumbed to failure of the coronary circulation, 11 had another and fatal occlusion (blocking); 6 died suddenly, presumably of acute coronary insufficiency . . . and 1 died during severe angina pectoris (heart pang). It is of interest that only 1 in the group who completely recovered later had congestive failure.

"In contrast to the group who completely recovered, a second group of 63 . . . were limited thereafter by angina pectoris on effort. Nevertheless, 19 sur-

vived the ten year period. A slightly higher proportion (34 of 44 patients, or 77 per cent) died later of coronary insufficiency. . . . Of these 34, 11 had a subsequent fatal occlusion, 14 died of increasingly severe angina pectoris and 9 died suddenly. Again it is of interest that only 2 later had progressive congestive failure.

"Finally, among the remaining 44 patients, dyspnea (labored breathing) on exertion . . . was chiefly responsible for limitation of activity, although some had both angina pectoris and dyspnea. . . . None with dyspnea survived the ten year period. . . .

"Thirty-three of the 50 patients who survived the first decade were limited by angina pectoris as they entered the second decade, and 9 of these had one or more later attacks of coronary thrombosis; the remaining 17 were without cardiac symptoms, although 6 had further attacks of coronary thrombosis, from which they completely recovered."

IMPORTANCE OF HOSPITAL RECORDS

Personally, I have been somewhat surprised by the extent to which doctors leave the making of hospital records to nurses. Thereby, it seems to me, the history is too much opened to error, especially of omission. As evidence, the chart will have probative value largely in proportion as it speaks for the doctor rather than the nurse. The suggestion is, not that you should do the writing, but only that, as a matter of self-interest, the record is important to you. It is apt to be highly so if fate ever casts you for the part of defendant in a malpractice suit.—Royal Stone, Supreme Court of Minnesota, before the County Officer's Meeting, St. Paul, Feb. 22, 1941.

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And keep it there long enough,
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FINDS WAY TO ABATE IRRITATIONS CAUSED BY ADHESIVE STRAPPING

Study Shows Painting Skin With a Solution Before Applying The Plaster Reduces Number of Reactions, Doctor Says

A means of minimizing the skin irritation that sometimes is produced by adhesive plaster is reported in *The Journal of the American Medical Association* for November 22 by Robert F. Legge, M.D., Oakland, Calif.

A series of observations on 46 different persons, he says, showed that painting the skin with certain solutions before the adhesive was applied lessened the number of reactions. Compound tincture of benzoin, merthiolate and metaphen, the latter two substances being combined with alcohol and acetone, were the three solutions used by Dr. Legge in his study.

"The strappings were always of the lower part of the back," he says, "and the area strapped was approximately 7 inches by 15 inches. In each instance the area to be strapped was divided into four squares. One of these was not painted, for a control. . . ."

The sites of the squares were varied, so that the square treated with benzoin, for example, was at one observation in the middle of the field to be strapped and at another on the edge.

Dr. Legge explains that previous investigations of such skin irritations had been directed chiefly toward an effort to determine the factors involved in its production, no doubt with the object of removing from the plaster the irritants which caused the irritation. "Apparently it is impossible to remove these irritants without reducing the effectiveness of the plaster so far as its adhesive properties are concerned," he says.

Painting the skin with any one of the three solutions reduced the number of reactions, Dr. Legge reports, but the skin treated with the merthiolate solution "will show fewer reactions than skin treated with either of the other two solutions."

WAR RATIO OF MALE TO FEMALE BIRTHS

The normal proportion of male births over female births was even greater in every European belligerent power during the last years of World War I and for perhaps two or three years afterward, *The Journal of the American Medical Association* for November 22 says in answer to an inquiry.

"The proportion of male births increased also in many of the important European neutral countries," *The Journal* continues, "including Norway, Sweden, the Netherlands and (for the year 1920) Switzerland. There was an observable rise in Australia, but not in the United States or in New Zealand, among the non-European belligerents. The increase in the proportion of male births, where observed was of short duration."

As for the reasons for this increase, *The Journal* says that "A simple explanation that seems entirely adequate has not yet been offered."

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February, 1942

In This Issue

Senile Ectasy

✦

The Surgical Treatment of Deafness

✦

and

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Medicine and National Defense

(See page 21 for Table of Contents)

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†Archives of Physical Therapy, *21*, 12 (Jan.), 1940.

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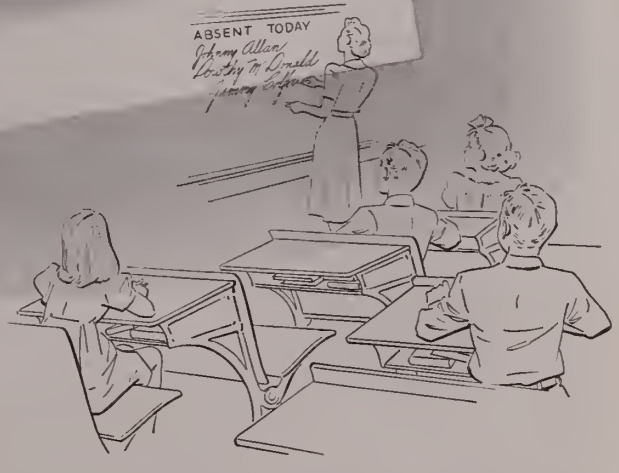
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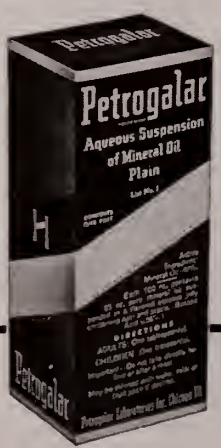
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(1) 1811. The Art of Preserving All Kinds of Animal and Vegetable Substances for Several Years, M. Appert, Black, Perry and Kingsbury, London.
1938. Food Research 3, 13.
1938. Ibid. 3, 91
1939. Canned Food Reference Manual, American Can Company, New York
1941. Ind. Eng. Chem. 33, 292

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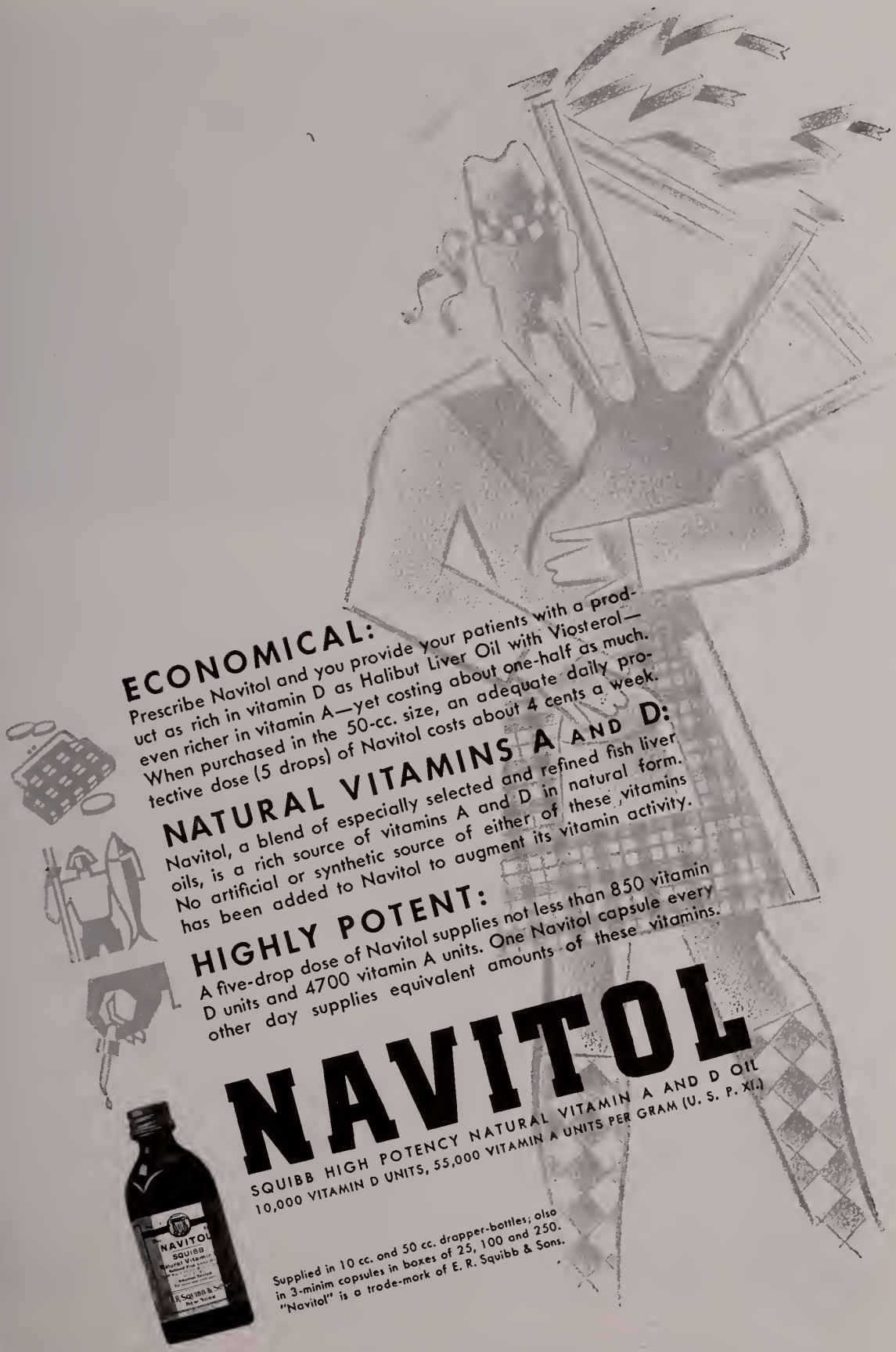
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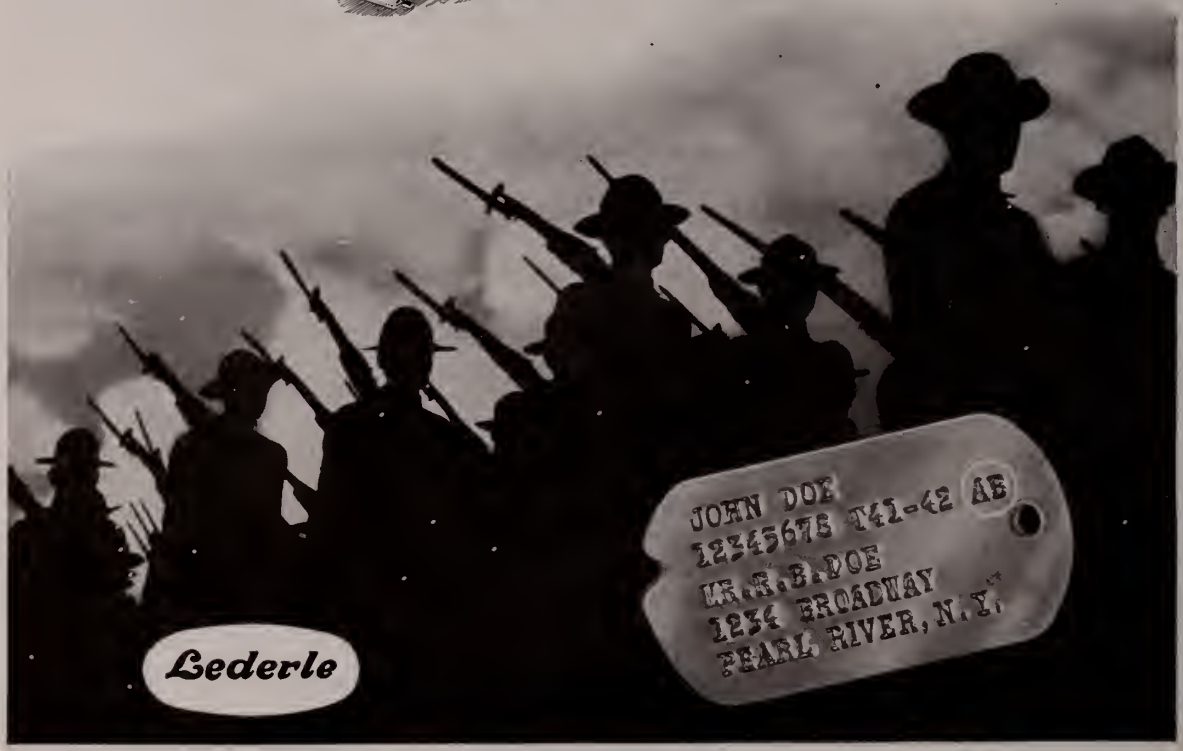
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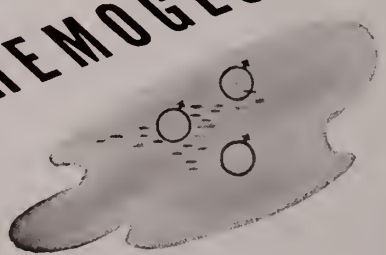
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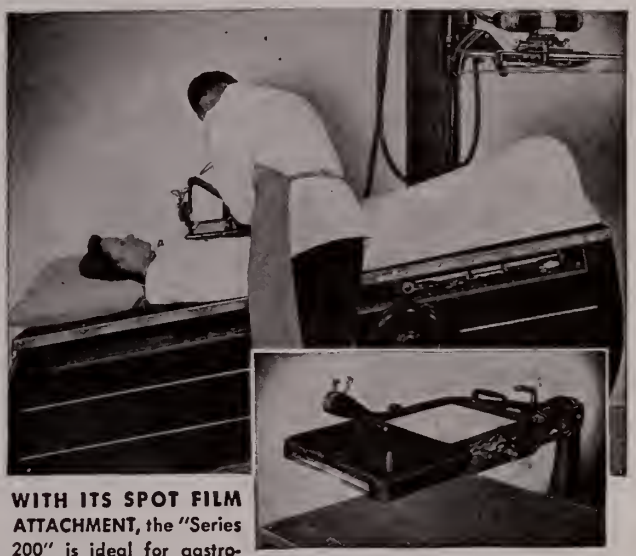
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**J. A. M. A., 93:1110, Oct. 12, 1929*
Bruckner, Die Biochemie des Tabaks, 1936
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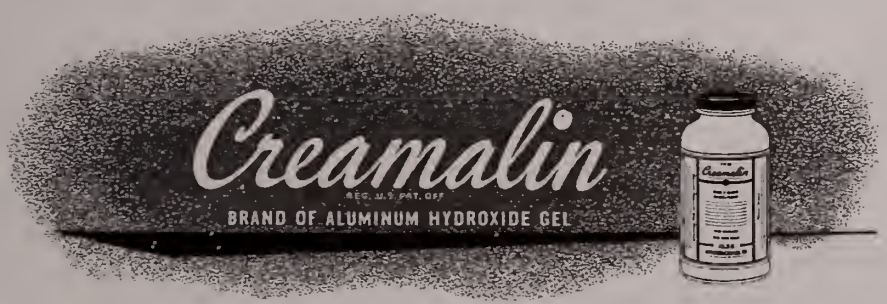
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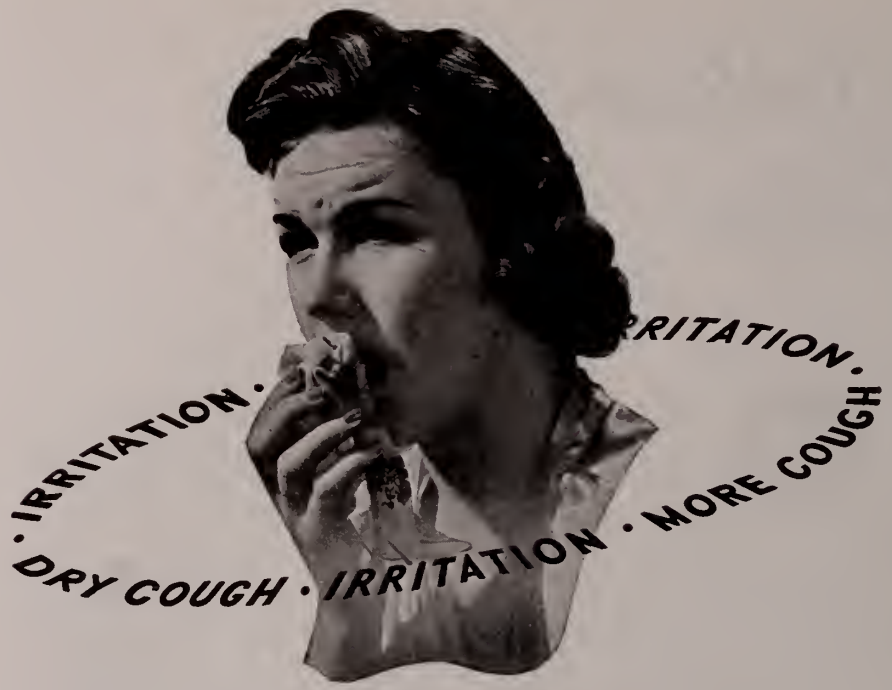
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The Illinois Medical Journal

February, 1942

VOL. 81, NO. 2

Official Journal of the Illinois State Medical Society

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Editorials

MEDICINE WILL ACCEPT THE CHALLENGE

The call to physicians to enter the services of the United States armed forces has gone out since the assault on Pearl Harbor. We have been informed that the response has been excellent, but there will be need for many more physicians constantly during coming months as the army increases. It seems quite probable that within another year we shall see the largest army in the history of this country.

The Procurement and Assignment Agency of the government will assume responsibility for the procurement of the necessary physicians, dentists and veterinarians needed in large numbers. They hope to have a long waiting list of men willing to join the forces so that they may make the necessary selections as additional professional men are needed.

We are informed that the present needs are largely for those men under the age of 45, although men over that age who are in good physical condition and ready to enter service, may be accepted. Many physicians believe the questionnaire submitted during the fall and winter of 1940-1941 gave all necessary information and constitutes an enrollment, but this is not the case. This former questionnaire did give much information to the government which should be of much use in the near future, but it did not constitute an actual enrollment.

As this article is being written, word has come that the Procurement and Assignment Agency will soon have another form available for enrollment, and that the form published in the Journal of the American Medical Association and in the January issue of the Illinois Medical Journal will be discontinued.

The medical profession has more to offer the government than ever before with the many contributions to medical science within recent years. The use of the sulfonamides, blood plasma in emergency services, improvement in surgical technique, etc., are indeed most valuable to our nation at this time.

With our present day war wounds it is stated that more debridement of soiled tissue is necessary than ever before and that the use of several of these newer drugs has markedly reduced the mortality rates of extensive wounds. The call has gone out for blood plasma in large quantities and it seems quite probable that blood procurement teams will be needed to work in all of our hospitals to procure this highly desired product. The blood will be sent to the several processing stations where it will be prepared and sealed in proper containers for use anywhere it may be needed.

In addition to the thousands of physicians who will be needed in the armed forces, many others will be needed for essential duties, such as examination of selectees, care of workers in essential industries, preparations for civilian defense, and in many other capacities. It seems quite probable at this time that during the present war there will be something which every able bodied physi-

cian can do to help his country in the "all-out for victory program."

We would recommend that every physician read regularly the many articles along the line of medical preparedness in the Journal of the American Medical Association and also the new department appearing in this issue of the Illinois Medical Journal, "Medicine and National Defense," which will appear regularly for the duration.

NOW IS THE TIME FOR EVERY PHYSICIAN TO COME TO THE AID OF HIS COUNTRY

Buy Defense Bonds and Defense Stamps to Help Your Country

THE EYE PROBLEM IN THE NATIONAL DEFENSE SITUATION

A National Emergency, such as we have now entered upon, presents untold problems, both immediate and future. Some are beyond the range of solution, but the majority can be solved by cooperation, work and patience. The ophthalmological problems that are raised by the demands of these times are interesting, somewhat embarrassing, but not beyond the possibilities of our present knowledge and capacity.

In this emergency, there are four main roles for the ophthalmological profession:

(A) Duty with the armed forces
(B) Care of the civilian population
(C) Teaching of undergraduate and graduate students
(D) Examination of selective service men

The first duty of the sub-committee on ophthalmology of the National Research Council was to determine whether or not there was a sufficient number of trained men to fulfill these requirements and, if not, to provide adequate training courses to meet the deficiency. Accurate statistics were lacking, but in round numbers it was found that about 6,000 physicians had especial knowledge of the subject. Approximately 2,000 are men in general practice who have some special knowledge of ophthalmology. Another 2,000 have had more or less adequate training and usually do Ear, Nose and Throat work, combined with Eye. The last 2,000 have been

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Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

certificated by the American Board of Ophthalmology.

The Armed Forces require 7500 physicians per million men. Approximately 250 of the medical personnel should be ophthalmologists, which indicates a necessity today of 500 ophthalmologists on active duty. In active hostilities, with resultant casualties, the number will have to be increased slightly. Until the Armed Forces exceed 4,000,000, this will mean the requirement of 1200 to 1300 ophthalmologists. So the number to fulfill the necessities of Class B, C and D would be only 20% less than the existing number of civilian physicians practicing ophthalmology. Consequently, it was not deemed necessary to institute special courses for rapid training and thus lower the professional standards of the specialty.

The duties of the ophthalmologists with the Armed Forces are varied, but do not deviate materially from civilian practice. Geriatrics plays no role and the surgical procedures are mainly those depending upon trauma and not disease. Visual examinations and refractions occupy the majority of attention until battle casualties appear. In such cases, first aid has already been rendered and reparative measures are in order. However, the number of ocular injuries is comparatively small in the total roll of casualties.

The work required in Classes B, C and D will have to be performed by the 80% of ophthalmologists not called to duty with the Armed Forces. Inasmuch as the Services utilize only men from 21 to possibly 35 years of age, the total amount of civilian work as compared to peace time will not decrease materially for the men of that age comprise only a very small percentage of routine practice. But to the usual civilian work must be added that entailed by possible non-military bombing, should we be so unfortunate as to undergo the terrific aerial punishment that has been inflicted upon England. Our civilian physicians must be prepared to undertake at least the first-aid treatment of severe ocular injuries. To that end, there has been prepared under the direction of the National Research Council a Manual on Ophthalmology for the general physician, so located that ophthalmic advice is not immediately available. Specific instructions, particularly for the management of wound and gas injury, utilizing only facilities available to all medical men, are set forth in abbreviated form, and it is hoped to place this book in the hands of all medical officers on duty with troops as well as in the hands of civilians in general practice. All this does not mean that the civilian eye physicians of the United States are going to have to do 20% more work, for as the country enters active hostilities and the war costs mount, much of the present non-essential ophthalmologic work will be postponed or entirely eliminated.

It is believed that the same wise policy as in World War I will be adopted of not permitting the teachers to enter active duty. This country will continue regardless of the outcome of the war, and physicians and ophthalmologists will still be required. So the schools for undergraduate as well as graduate teaching must be maintained and the men trained as teachers must continue. Russia made the sad mistake of trying to make doctors by a short cut, but realized the error in time before the medical resources of the country were depleted. Germany, by necessity, is falling into the same course but because of the drain of her manpower, cannot do otherwise. Our professional personnel and facilities must be expended wisely and not to the point of depletion.

Ophthalmological examination of the selective service men is in the nature of a consultation and hence requires a comparatively small amount of ophthalmological time. This is and will be done by civilian oculists as an adjunct to their clinic and private practice and represents their voluntary contribution toward the preparation of the Armed Forces for the defense of the nation.

H. S. G.

AN UNUSUAL CONTEST

In recent years papers and magazines have been literally filled with contests of various sorts, such as writing slogans, providing the last line for a poem, and what not. But a contest was recently called to the attention of the public of an entirely different character.

The popular radio program "Town Hall" announced that they will award $1,000.00 in prizes for the best essays on "What Must We Do to Improve the Health and Well-Being of the American People?"

In the announcement they state that the living

standards of the American people are higher than those of any other country, but "there is yet much that needs to be done to make our people physically, mentally and spiritually fit — fit to meet the challenge that Totalitarianism has hurled at the Democratic way of life. Surely we must give thought at this time to our internal as well as to our external defenses."

In the contest two sets of prizes are to be awarded, one for the adult division and one for the youth group. The contest closes February 1, 1942, and it is quite obvious that many contestants by that time will have submitted essays and that many interesting suggestions will have been made.

The sponsors of this contest are to be commended for awarding prizes not for a slogan or anything that directly advertises some product offered to the American people, but for something which will no doubt develop suggestions which will be of benefit to the people of our country. The health and morale of any nation are among its greatest assets, and where else, except in a Democratic country, would you expect to see the morale as high as has been manifested in the United States since the attack on Pearl Harbor?

PAPERS FOR THE 1942 ANNUAL MEETING

The 1942 annual meeting of the Illinois State Medical Society will be held in Springfield on May 19, 20, 21. Plans are now being made for the scientific programs to be presented before the individual sections and for the general meetings.

Physicians desiring to present papers at this meeting should communicate as early as possible with the officers of the section before which they desire to present a paper. Each section has a chairman and a secretary one residing in Cook County and the other down-state and it is advisable to keep this in mind when writing the section officers.

On account of the fact that the number of papers to be presented before each section will be limited, it is desirable that the best possible program be developed, and one which will appeal to the physicians as a whole rather than to a few members of individual specialties.

KEEP THEM ROLLING!
KEEP THEM FLYING!
PUT MORE MEN IN THE AIR!
BUY U. S. DEFENSE BONDS

In writing to the proper section officer, it is advisable to give the title of the paper you desire to present, then give either an abstract of the paper on other information concerning it, so that the officers will be better able to judge the merits of the paper in considering the advisability of scheduling same on their respective programs.

The personnel of the several section officers is as follows:

Section on Medicine
F. Garm Norbury, Chairman, Jacksonville
M. Herbert Barker, Secretary, 700 N. Michigan Ave., Chicago

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Loyal Davis, Chairman, 54 East Erie Street, Chicago
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Section on Obstetrics and Gynecology
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Owing to the fact that these section officers responsible for the preparation of the programs for each of the scientific sections are desirous of completing their list of speakers as soon as

possible, it is advisable for all members of the State Medical Society to contact the proper section officer as early as possible in order that they may have the opportunity of getting you on the program for the 1942 annual meeting.

"HISTORY OF MEDICAL PRACTICE IN ILLINOIS"

A few years ago, the Illinois State Medical Society published the History of Medical Practice in Illinois, with the late Lucius H. Zeuch as editor for the volume. Subscriptions were received prior to the publication of this book, at $10.00. It was soon learned that it would be impossible to put all available historical data in one volume, and the Society decided that eventually a second volume would be published, and there would be no additional cost to subscribers.

Soon after the first volume appeared, Dr. Zeuch died, and Dr. Charles J. Whalen, then editor of the Illinois Medical Journal was selected as editor for the proposed second volume. On account of unsatisfactory conditions, it was decided to hold the second volume in abeyance until some future date. Since the death of Dr. Whalen, it was deemed advisable to withhold further action on account of the present emergency.

The Society has on hand at this time, a number of copies of the first volume edited by Dr. Zeuch, which contains much valuable medical historical data, well illustrated, bound in cloth and in perfect condition, which may be procured while the supply lasts, for $5.00. Physicians or libraries desiring to procure a copy of this unusual book, may send their remittance to the Secretary, and a copy will be forthcoming, post paid within a few days.

Address: Harold M. Camp, M.D., Secy.
Illinois State Medical Society,
Monmouth, Illinois.

CAN'T FOOL KIDDIES

The child took a long look at the old man, and asked: "Were you in the ark, Grandpa, when the flood came?"

"No, certainly not, my child," replied the aged man.

"Then why weren't you drowned?" asked the child.

SKIN HAZARDS HIGH IN AIRPLANE MANUFACTURE

An inspection of airplane plants employing over 100,000 men shows that there are many skin hazards in airplane manufacture.

The principal ones are those from cutting oils, thinners, and solvents used in paints and "dopes," plating and rustproofing of metals, fluxes used in welding, and solvents used for cleaning and degreasing.

Preventive measures consisting of wearing of impervious clothing, the use of protective ointments, and the use of nonirritating skin cleansers, in addition to proper general and local ventilation, are described.—*Public Health Reports, August, 1941.*

Studies of occupational dermatoses in aircraft manufacturing plants in California were made by Dr. Louis Schwartz, of the Industrial Hygiene Division, National Institute of Health, in cooperation with Dr. J. P. Russell, of the California State Industrial Hygiene Service. This investigation covered nine plants, employing a total of 87,540 workers, or over 90 per cent of all employees in this industry. The most frequent causes of cutaneous diseases in these plants were found to be cutting and lubricating oils in machine shops; organic solvents in spray painting, doping and degreasing operations; paint and resin coatings on duraluminum; acids and caustics in cadmium-plating and chrome-anodizing processes; zinc chromate paint; fluoride fumes from welding operations; mahogany dust in woodworking shops, and organic acids and solvents in plaster shops. Thirty-six employees with cutaneous lesions were examined, and of this number, 23 were found to have dermatoses of occupational origin.

Plant physicians and safety directors in these establishments were advised as to the necessity for personal hygienic measures, the use of protective clothing and ointments, and the enclosure and ventilation of processes from which irritating gases, vapors or fumes emanate. The excellent cooperation which is being obtained from employers and employees in the adoption of these precautionary measures should result in a marked decrease in the incidence of dermatoses in aircraft factories.—*War Medicine, July, 1941.*

Correspondence

RULES GOVERNING AWARD OF AMERICAN ASSOC. OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

(1) "The award which shall be known as 'The Foundation Prize' shall consist of $150.00."

(2) "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M. D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

(3) "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

(4) "Manuscripts must be limited to 5000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

(5) "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

(6) "Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the Secretary before June 1st."

(7) "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

(8) "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

Jas. R. Bloss, M.D., Secretary.
418 Eleventh Street,
Huntington, W. Va.

ANNOUNCE EXAMINATIONS BY AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Atlantic City, N. J., by the entire Board, prior to the opening of the annual meeting of the American Medical Association in Atlantic City, on June 8, 1942.

Application for adminission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 1, 1942. It will greatly facilitate the work of the Board if applications are filed as far as possible in advance of the closing date for their receipt.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office before April 15, 1942.

CHICAGO SELECTED FOR 1942 CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

Because of the war, the thirty-second annual Clinical Congress of the American College of Surgeons will be held in Chicago October 19 to 23, instead of in Los Angeles as originally planned. Headquarters will be at the Stevens Hotel. The twenty-fifth annual Hospital Standardization Conference sponsored by the College will be held simultaneously. The programs of both meetings will be based chiefly on wartime activities as they affect surgeons and hospital personnel in military and civilian service.

Sixteenth Annual Meeting

NATIONAL CONFERENCE ON MEDICAL SERVICE

Palmer House, Chicago, Sunday, February 15, 1942

PROGRAM

9:00 a.m. REGISTRATION

9:30 a.m. THE RELATION OF THE PHYSICIAN TO MILITARY, CIVILIAN AND INDUSTRIAL HEALTH

1) Procurement and Assignment of Physicians for Military Service
Sam F. Seeley, M.D., Executive Officer, Procurement and Assignment Service, Washington, D. C.

2) Civilian Defense
 a) Civilian
 b) Hospitals
 c) Emergency Medical Squads
 Graham L. Davis, Hospital Consultant, W. K. Kellogg Foundation, Battle Creek, Michigan

3) Industry's Problem in Maintaining Adequate Medical Care
 a) Non-Defense Projects
 John R. Nilsson, M. D., Chief Surgeon, Union Pacific Railroad, Omaha, Nebraska
 b) National Defense Projects
 W. D. Norwood, M.D., Medical Director, DuPont Company, Elwood Ordnance Plant, Joliet, Ill. (Tentative)

11:30 a.m. THE ROLE OF THE STATE MEDICAL SOCIETY AND STATE AND CITY DEPARTMENTS OF HEALTH IN NATIONAL DEFENSE

1) State Medical Society
W. P. Wherry, M. D., President Nebraska State Medical Society, Omaha, Nebraska

2) State Department of Health
W. L. Bierring, M.D., State Health Officer of Iowa, Des Moines, Iowa

3. City Department of Health
Herman N. Bundesen, M.D., President, Board of Health, Chicago, Illinois

12:15 p.m. DINNER

1:30 p.m. PRESIDENT'S ADDRESS — Harold M. Camp, M.D., Monmouth, Illinois

1:45 p.m. REPORT OF NOMINATING COMMITTEE; ANNUAL ELECTION OF OFFICERS; SELECTION OF PLACE FOR 1943 MEETING

2:00 p.m. REJECTED SELECTEES AND THEIR REHABILITATION FOR ACTIVE MILITARY SERVICE

1) Local and Induction Board Examinations
Samuel J. Kopetzky, M.D., New York City

2) One Million Rejected; What Percent May Be Salvaged?
 a) By Personal Physician or Dentist Prior to Induction
 George Baehr, M.D., New York City
 J. R. Blayney, D.D.S., Chicago, Illinois
 b) Following Induction
 L. D. Redway, M.D., Ossining, New York

3:30 p.m. THE ROLE OF THE MEDICAL, DENTAL, NURSING SCHOOLS AND HOSPITALS IN ANTICIPATING THE ACCELERATION OF TRAINING

1) The Need for a Trained Personnel to Care for the Health of the Military
J. R. Darnall, M.D., Lt. Colonel, Medical Corps, Washington, D. C.

2) Status of Pre-Medic, Medic and Dental Students, Internships and Residencies During the Emergency
Leonard Rowntree, M.D., Chief, Medical Division, Selective Service System, Washington, D. C. (Tentative)

3) What the Medcal, Dental and Nursing Schools May Do To Hasten the Graduation of Their Respective Students
Fred C. Zapffe, M.D., Chicago, Illinois (Tentative)

All Physicians and Dentists are cordially invited to attend the conference. As we go to

(Continued on page 88)

press we are informed that general Hershey expects to be present and participate in the discussions.

Harold M. Camp, M.D., President, Monmouth, Ill.
J. D. McCarthy, M.D., Secretary, Omaha, Neb.

AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY WILL BE HELD DESPITE WAR

To the Editor:

In this time of stress, there should be a definite interest in the welfare of the mothers and babies of the nation. The Committee which is sponsoring the next American Congress on Obstetrics and Gynecology, to be held in St. Louis on April 6-10, 1942, represents the only organization outside of governmental bodies which has attempted to unite the efforts of voluntary and other agencies to carry out the widely disseminated plans for the care of women and children. Opportunity for the presentation of advances in obstetric and gynecologic knowledge will be afforded to the many groups interested in these problems at a nation-wide gathering of this kind. The Directors of the project believe that, notwithstanding the war situation, the Congress should be held at the stated time and are proceeding with their plans to make of this an outstanding gathering. Further details of the program will be communicated as these are made available. Inquiries may be addressed to the Central Office, 650 Rush Street, Chicago, Illinois.

George W. Kosmak, M.D.
Chairman, Committee on
Medical Publicity

INDUSTRIAL PHYSICIAN'S CONVENTION

The American Association of Industrial Physicians and Surgeons, and the American Industrial Hygiene Association will hold their joint Annual Convention in Cincinnati from April 13 to 17, 1942. A program is in preparation in which important medical and hygienic problems associated with the present huge task of American industry will be presented and discussed in clinics, lectures, symposia, and scientific exhibits. The central purpose of the meeting will be to provide a five-day institute for the interchange and dissemination of information on new problems as well as for the consideration of up-to-date methods of dealing with those that are well known. The industrial physicians have taken responsibility for the program of the first two and one-half days and the hygienists for the remainder of the five days, but most of the subjects chosen for discussion will be of interest not only to physicians, but equally so to industrial engineers, and executives.

WOMAN'S AUXILIARY NOTES

Auxiliary Members Greetings: —

At a time like this when so many difficulties confront us, we should more than ever before give deep thought to our organization. It is of vital importance to organize, to work together and exert united strength to this great organization, The Woman's Auxiliary to the Illinois State Medical Society.

We, as an organization, are measuring up well, but the goal has not been reached. We need new counties and new members to increase our membership which is below par for the number of years we are organized.

I earnestly urge the help of each individual member to assist the district councilor to bring in new members.

To all disbanded counties, may I extend a hearty welcome back to the Organization where you may assist with the constructive work which is assigned to us by the Medical Profession and to our Benevolence Fund.

In closing, I ask you one and all to send in any suggestions you may have in mind, or any questions to membership.

Sincerely,
Hilda B. Wanninger,
Organization Chairman
Woman's Auxiliary to the
Illinois State Medical Society.

COUNTY NEWS

Several members of the Woman's Auxiliary to the Bureau County Medical Society met at a dinner Nov. 11th at the Valley Hotel, Spring Valley.

The program following the dinner was held at the home of Mrs. R. E. Miltenberger. The speaker for the evening was Miss Perlman, of the Hygienic Institute in Peru. Miss Perlman whose work is limited to Public Health service in maternity and child health care, dwelt on the subject of school hygiene and how to prepare the child for healthful living.

A meeting of the Henry County Medical Auxiliary was held at the home of Mrs. J. C. Williamson, Nov. 13th in Toulon. Mrs. D. E. Meier reviewed an article from Hygeia on "Health for Women Over 40" which was followed by a discussion on Nutrition.

The Laity Day dinner sponsored by the Vermilion Woman's Auxiliary was held in the St. James Community room, Oct. 29th. Dr. Bauer, director of the Bureau of Health Education of

the American Medical Society, in addressing the audience stressed that Health Education will save us from many of the foolish and harmful things we do. Everyone needs health education to insure their fitness at all times and to protect them from all kinds of fallacy as well as the health racketeer abroad today.

The Regional meeting of the Auxiliaries to the Illinois State Medical Society was held at the Leland Hotel Oct. 14th. Mrs. Rex Campbell, Mrs. D. Sirca, Mrs. William J. Morganson and Mrs. A. T. Kwedar, members of Sangamon County Auxiliary were in charge of the plans for the meeting. Mrs. Harry Otten, Springfield, State President, welcomed the vistors and guests. Mrs. W. J. Wanninger, Chicago, President-Elect, of the State, outlined plans for the Organization. Dr. Frank P. Hammond spoke on "All Out Aid to Medicine."

The Woman's Auxiliary to the Peoria Medical Society held a meeting Tuesday, Dec. 2nd, at the University Club. After dinner Mrs. Cable of the Home Service department of the Light Company spoke on "Different Types of Foodstuffs." Mrs. Maxine Pollak reviewed Hans Zinnsser's book "As I Remember Him."

Mrs. Harry Otten, President
Mrs. Charles W. Stigman,
Press & Publicity

SQUIBB INTRODUCES PRODUCT FOR SIMULTANEOUS IMMUNIZATION AGAINST DIPHTHERIA AND WHOOPING COUGH

The first preparation for simultaneous immunization against diphtheria and whooping cough to be made available commercially in this country is now offered by E. R. Squibb & Sons, New York, in Diphtheria Toxoid Alum Precipitated — Whooping Cough Vaccine Combined Squibb. Each 1 cc. of the combination product contains a full immunizing dose of Diphtheria Toxoid Alum Precipitated and 10,000 million killed Bacillus (hemophilus) pertussis.

This new product possesses the advantage of convenience and economy, and in addition, with a combined product of this type, the antibody responses of the two antigens tend to complement each other. The reactions to the combined antigens are apparently no more frequent or severe than those following the use of diphtheria toxoid alum precipitated.

To be on the safe side, it is suggested for the present that three or four injections of 1 cc. each of Diphtheria Toxoid Alum Precipitated — Whooping Cough Vaccine Combined be given at monthly intervals. This would confer a high degree of immunity to diphtheria and should afford adequate protection against whooping cough. Immunization is recommended for all chldren over six months of age.

Diphtheria Toxoid Alum Precipitated — Whooping Cough Vaccine Combined Squibb is supplied in 5 cc. vials containing sufficient vaccine for five injections.

A.P.M.A. PRESENTS AWARD TO DR. SPIES

At the mid-year meeting of the American Pharmaceutical Manufacturers Association in Washington, D. C. in December, an award of distinction was presented to Dr. Tom Douglas Spies, "in recognition of his outstanding contributions to our knowledge of the value of the B-complex vitamins, particularly nicotinic acid, thiamine and riboflavin, as pharmaceuticals important in the treatment of disease."

The presentation was made by Dr. Morris Fishbein, Editor of the Journal of the American Medical Association.

Dr. Spies is Associate Professor of Medicine, University of Cincinnati School of Medicine; Director of the Nutrition Clinic at the Hillman Hospital of Birmingham, Ala.; member of the Council on Foods of the A.M.A.; member of subcommittee on nutrition of the Committee on Medicine of the National Research Council.

Each year the A.P.M.A. presents an award to a scientist who has made a fundamental contribution to public health in the field of drug therapy.

In addition to the award, addresses were made by Dr. Harold G. Moulton, President of the Brookings Institution, Washington, D. C. on "Post-War Problems;" Hon. Paul V. McNutt and Dr. R. P. Herwick on "The Federal Food, Drug and Cosmetic Act;" a National Defense Session introduced by Charles Wesley Dunn.

The eleven ages of man can be expressed in menu form as follows:

1. Milk.
2. Milk and bread.
3. Milk, bread, eggs and spinach.
4. Oatmeal, bread and butter, green apples and all-day suckers.
5. Ice cream soda and hot dogs.
6. Minute steak, fried potatoes, coffee, and apple pie.
7. Bouillon, roast duck, scalloped potatoes, creamed broccoli, fruit salad, divinity fudge, and demi-tasse.
8. Pâté de foie gras, weiner schnitzel, potatoes Parisienne, egg plant a l'opera, demi-tasse, and Roquefort cheese.
9. Two soft-boiled eggs, toast, and milk.
10. Crackers and milk.
11. Milk.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

We have been engaged in war since December 7, 1941. In one day we became a united people with a single purpose in mind. Isolationists joined the ranks at once and political bickering ceased.

All of our economics are being marshalled with a single thought. During the world upheaval, and in the midst of many domestic problems, we have been striving to maintain free enterprise as a fundamental of democracy and freedom. Today, and rightfully so, free enterprise has ceased, as a war measure to bring all of our resources quickly and efficiently to the prosecution of this war. Free enterprise is now engaged in a determination to fight for our very freedom, and the freedom of all nations crushed by the Axis powers. This is being done in a democratic way. The government has placed in command men of proven ability and given them authority to mobilize our vast resources. They are not to be hampered by politics.

Labor is taking its responsibility as seriously and patriotically as the forces going to combat. Mistakes will be made; men will be placed in positions they are not qualified to fill, and it will take time to weed them out. Such a tremendous organization cannot be assembled in a short period of time, without this happening. Every American must keep in mind that mistakes will cost lives and money. We have a right to hold those in high positions responsible and we must retain the right of responsible and patriotic expression. Our expression should be guarded because the task is great and it is human to err.

The medical profession assumes its responsibility to the armed and civilian forces. The program of medical education and post graduate training over a period of years makes it possible to immediately give to our armed forces the highest type of medical service. Many of the best trained men in our profession are on the way. The forces of science are lined up to kill and the forces of science are lined up to save.

At the end of this struggle we are looking for freedom and democracy for ourselves and the rest of the world. We are looking for a just peace for all peoples and we are resolved that it shall not occur again in twenty years.

The return of free enterprise and all of our civil liberties at the conclusion of the war is our guarantee of the ability of a democracy to function in the midst of world conflict and upheaval.

Dr. R. K. Packard,
Chairman
Committee on Medical Economics

FOCI OF ATTENTION

The wise clinician spends more time trying to understand the cause of disease than he does in seeking to make himself familiar with the drugs reputed to cure it. In other words, he is less concerned with medicaments than he is with the nature of the infective or other agent of disease, how it gains access to or is enabled to have an effect on the body, and what changes it produces in the body tissues.—*Editorial, Australian Journal of Medicine.*

BETTY'S OBSERVATION

Little Betty, returning from school one afternoon, said: "Johnny Wilson's examination papers were so good that teacher keeps them on her desk to show visitors."

Asked about her own, she had to confess that they weren't good.

"But why aren't your's as good as Johnny's?" her mother asked. "You have the same opportunities."

"I know, mother," said Betty, "but Johnny Wilson comes from a very bright family."

Medicine and National Defense

For the duration of the war, it is the desire of those responsible for the publication of this Journal, to cooperate in every way possible with the Government in the "all out for victory" program. This department will carry each month those articles pertaining to medical problems in connection with National Defense which are received from Governmental Agencies, as well as some from the American Medical Association and its Journal. It is hoped that each reader of the Illinois Medical Journal will read these articles regularly, as it is the desire of the Editor, Editorial Board and others responsible for the publication of the Journal to give all possible information each month on this important subject.

RECOMMENDATIONS TO ALL PHYSICIANS WITH REFERENCE TO THE NATIONAL EMERGENCY

I. *Medical Students.* A. All students holding letters of acceptance from the Dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students in Class I-A, they should immediately notify their deans and if necessary exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the State Director and if necessary to the National Director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of Second Lieutenant, Medical Administrative Corps of the Army of the United States; or Ensign H.V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the Corps Area Surgeon of the Corps Area in which the applicant resides and applications for commission in the Navy should be made to the Commandant of the Naval District in which the applicant resides. Medical R.O.T.C. students should continue as before with a view of obtaining commissions as First Lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least 12 months of internship.

II. *Recent Graduates.* Upon successful completion of the medical college course, every individual holding commission as a Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States

Army, Washington, D. C., for appointment as First Lieutenant, Medical Corps, Army of the United States. Every individual holding commission as Ensign H.V. (P), U. S. Navy Reserve, should make immediate application to the Commandant of his Naval District for commission as Lieutenant (J.G.) Medical Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant, (J.G.) in the regular Medical Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

III. *Twelve Months Internes.* All internes should apply for a commission as First Lieutenant, Medical Corps, Army of the United States, or as Lieutenant (J.G.), United States Navy or Navy Reserve. Upon completion of 12 months interneship, except in rare instances where the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as medical officers; those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. *Hospital Staff Members.* Internes with more than 12 months of interneship, assistant residents, fellows, residents, junior staff members, and staff members under the age of 45, fall within the provisions of the Selective Service Acts which provide that all men between the ages of 20 and 45 are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire country. All those so enrolled whose services have not been established as essential in their present capacities will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. *All Physicians Under Forty-Five.* All male physicians in this category are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, they should be made available for service when needed. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over 45, (b) physicians under 45 who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M.D. degree whose utilization would make available a physician for military service.

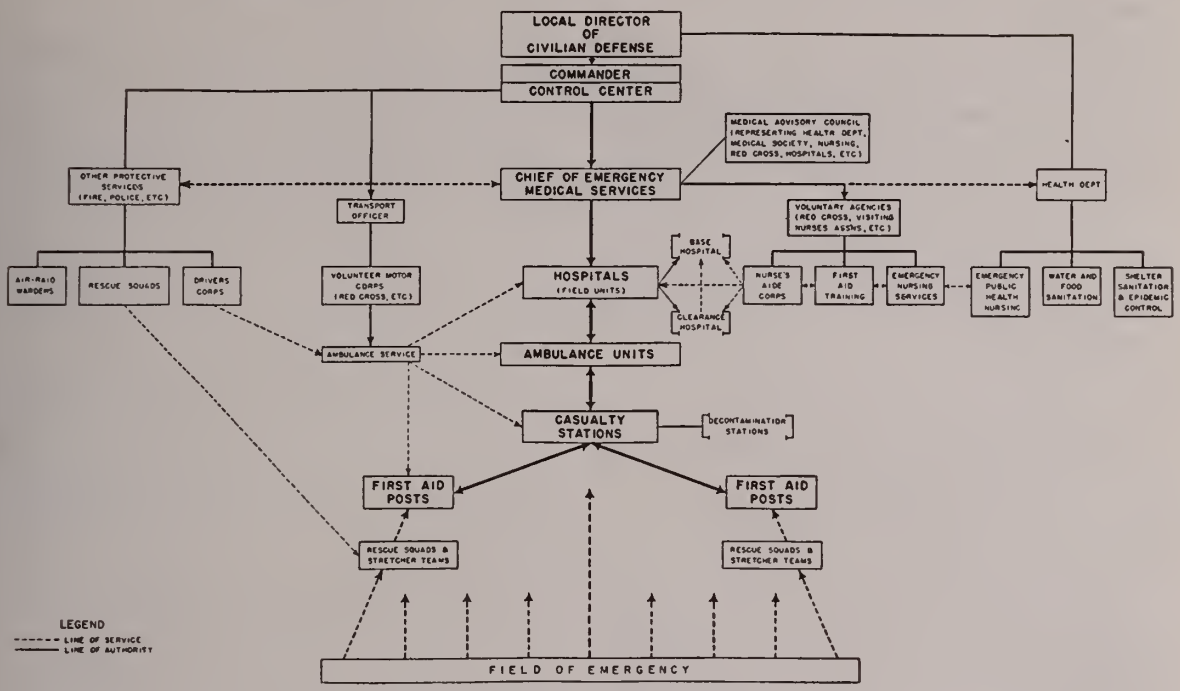
Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. *All Physicians Over Forty-Five.* All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those Agencies.

The maximal age for original appointment in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age.

All inquiries concerning The Procurement

ORGANIZATION OF LOCAL EMERGENCY MEDICAL SERVICES



and Assignment Service should be sent to The Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, SW, Washington, D.C., and not to individual members of the Directing Board or of committees thereof.

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CIVILIAN DEFENSE

The Medical Division of the U. S. Office of Civilian Defense has issued the second bulletin of its official series of instructions for emergency medical care of the civilian population in war emergencies, "Equipment and Operation of Emergency Medical Field Units." The bulletin explains the duties of local chiefs of Emergency Medical Service, describes the operation of Casualty Stations and First Aid Posts and lists the minimum equipment for Emergency Medical Field Units, organization of which was described in the first bulletin, "Emergency Medical Service for Civilian Defense," issued in August, 1941.

The Office of Civilian Defense recommends that all defense councils adopt the plans as set forth in these bulletins. Uniformity will make it possible for adjacent communities to pool or exchange their resources, and it is also desirable because of priorities in materials and manufactures. All equipment recommended conforms with that of the Medical Department of the U. S. Army, the bulletin points out.

The field casualty service projected by the Medical Division of the Office of Civilian Defense will be made up of Emergency Medical Field Units derived from hospitals in the community. These units will work in Casualty Stations set up at a predetermined site some distance from the scene of a disaster. The Casualty Stations will care for persons with minor injuries and those suffering from nervous shock or hysteria until they may return to their homes or to temporary shelters. An important part of the work of these stations will be to keep records of patients treated.

From the Casualty Stations medical teams may be sent closer to the disaster to set up First Aid Posts in which severely injured persons may receive emergency treatment before they are sent to hospitals. Here casualties will be classified according to the seriousness of the injuries and directed to Casualty Stations or hospitals as their condition requires. The instructions emphasize the importance of tagging all casualties immediately, giving all possible information as

to their identity, their injuries and the treatment given.

Equipment for the medical teams who will work in First Aid Posts has been worked out to provide in easily portable form the essentials for emergency treatment. Replacements will be furnished by Casualty Stations, which will have on hand larger stores of supplies.

To facilitate the sorting of casualties when they arrive at hospitals, the following symbols have been devised to be drawn on the forehead of injured persons:

U — Urgent — requiring priority attention
TK — Tourniquet
T — Indicating tatanus antitoxin has been given
H — Internal hemorrhage
M¼ — Indicating Morphine gr. ¼ or
M½ — Gr. ½ given

Casualty Stations will have on hand bulky equipment that cannot be carried by the first aid groups, such as traction splints, stretchers, collapsible cots, blankets and a reserve supply of drugs and dressings which may be issued to first aid posts as needed.

A tag has been designed which includes information as to identity and provides space for recording diagnosis, treatment and disposition of the case. The tag is to be filled out at the First Aid Post and will be attached to the patient before he is transferred to a hospital.

The local Chief of Emergency Medical Service, who functions under the administrative authority of the local director of civilian defense, has fifteen specified duties, explained in detail in Bulletin No. 2. Briefly, these officers' duties will be:

Integrate official and voluntary organizations which are to participate in the medical activities into the comprehensive community program.

Help organize Emergency Medical Field units as described in Bulletin No. 1.

Select sites for Casualty Stations.

Make a map locating hospitals, Casualty Stations, storage depots.

Plan transportation service for casualties and for medical personnel.

Cooperate with local defense authority in arranging drills of Emergency Medical Field Units in cooperation with other civilian defense units.

Make inventory of hospitals and other buildings in adjacent territory to which patients might be evacuated.

Assist in planning courses for volunteers in medical activities.

Stimulate recruitment of volunteers for the nurses' aide courses of the American Red Cross and help in placing these aides in hospitals, clinics, health departments and field nursing services.

Assist the local Civilian Defense Volunteer Office in training and placement of volunteers in health and medical agencies.

Stimulate and guide first aid training through the Red Cross and other agencies.

Stimulate and guide organization of First Aid detachments in industrial plants and similar establishments.

Collaborate with health authorities in protective measures against sanitary hazards.

Collaborate with authorities in plans for evacuation, with particular attention to medical needs of the population.

Keep the community and the participating groups informed of plans and activities.

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SANITARY ENGINEERING IN CIVILIAN DEFENSE

Ralph E. Tarbett, Senior Sanitary Engineer, U. S. Public Health Service, is Chief Sanitary Engineer of the Medical Division of the Office of Civilian Defense. Mr. Gordon E. McCallum, Sanitary Engineer, U. S. Public Health Service, has been commissioned in the Public Health Service Reserve and assigned to the Third Civilian Defense Region (Pennsylvania, Maryland, District of Columbia and Virginia) plus West Virginia and Ohio. Mr. McCallum is stationed in Washington. Mr. John H. Brewster, Troy, N. Y., at one time with the Indiana and later the New York state health departments, has also been commissioned in the Public Health Service and assigned to the First and Second Defense Regions.

The National Technological Civil Protection Committee, an advisory group to the War Department, has agreed to serve in the same capacity to the Medical Division of OCD, in matters of public health engineering. Mr. Walter Binger of New York, representing the American Society of Civil Engineers, is chairman of this commit-

tee. Other members represent other national engineering and related organizations.

The sanitary engineering section will work through State Defense Councils with State health departments in planning to meet the problems that may arise due to belligerent action. Of these, the maintenance of a continuous supply of safe water is of first importance.

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BLOOD BANKS FOR CIVILIAN DEFENSE

The Medical Advisory Board of the Office of Civilian Defense held a joint meeting with the Regional Medical Officers at the national headquarters in Washington, Dec. 8-9, 1941. Mayor LaGuardia, U. S. Director of Civilian Defense, addressed the group briefly, urging action on two counts: organization of emergency medical field units and designation of field casualty stations in the target areas on both coasts.

The medical defense officials decided that it is necessary that blood banks, as well as collecting stations for plasma and serum, similar to those developed by the American Red Cross for the Army and Navy, be established for civilian use. It was pointed out that a supply of whole blood and of plasma and serum for use among civilians is essential, as the armed forces will not be able to release any of their supply under conditions of actual warfare.

Dr. Wallace D. Hunt, medical officer for the Ninth Civilian Defense Region with headquarters in San Francisco, reported that the important cities of the West Coast, especially those in California, had well developed disaster services and that these were being rapidly integrated into the comprehensive civilian defense program.

Members of the Medical Advisory Board who attended the meeting were Drs. George Baehr, New York, chairman of the board and chief medical officer of the Office of Civilian Defense; Robin C. Buerki, Philadelphia; Elliott C. Cutler, Boston; Oliver B. Kiel, Wichita Falls, Texas; Albert McCown, Washington, and Huntington Williams, Baltimore. Dr. Fred Rankin, Lexington, Ky., was unable to be present.

Regional medical officers present, in addition to Dr. Hunt, were Drs. Allan M. Butler, Boston, first civilian defense region; H. Van Zile Hyde, New York, second region; W. Ross Cameron, Baltimore, third region; Judson D. Dowling, Atlanta, Ga., newly appointed to the fourth region; William S. Keller, Columbus, Ohio, fifth region; and Witten B. Russ, San Antonio, Texas, eighth region.

Others present included Miss Mary Beard, director of nursing service, American Red Cross; Dr. James A. Crabtree, executive secretary, Health and Medical Committee of the Office of Defense Health and Welfare Services; Dr. Thomas Parran, Surgeon General, and Dr. Erval R. Coffey of the U. S. Public Health Service and Dr. Martha Eliot of the U. S. Children's Bureau.

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PHYSICIANS NEEDED FOR RED CROSS BLOOD PROCUREMENT PROGRAM

The expansion of the blood procurement program under the auspices of the American Red Cross will require the services of physicians in a full-time capacity. In the near future there will be published in this section a statement as to the number of physicians required, the age group, the professional qualifications and a list of those to whom they will be asked to make direct application. The physicians wanted for this service will be preferably those over 45 years of age or, if under 45 years of age, not physically fit for the armed services.

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CANCEL DEFERMENTS OF RESERVE OFFICERS WHO ARE FEDERAL EMPLOYEES

The Secretary of War issued the following instructions, January 5:

1. In September 1940 the War Department promulgated a policy permitting Reserve officers who were employed in key civilian positions in the various governmental departments and agencies to be granted unlimited deferments from military duty by being transferred to the War Department Reserve Pool. Because of the present state of war, these deferments will be canceled, effective Jan. 15, 1942, and all affected Reserve officers will be considered available for active duty after notice of relief from the War Department Reserve Pool by this office.

2. Requests for limited deferments should be submitted in triplicate, addressed to the Adjutant General, Washington, D. C., and signed by the responsible head of the department or agency making the request. Such requests will receive favorable consideration, to the extent

that military necessity permits, in exceptional cases only. No general or permanent deferments will be authorized. Requests for deferment submitted after active duty orders have been issued cannot be considered.

3. The following information should be furnished with each request for deferment: (*a*) Name of the officer in full (initials should not be used). (*b*) Rank and branch in which commissioned. (*c*) Home address as last reported to the War Department. (*d*) Date of birth. (*e*) Title of present position (governmental payroll designation). (*f*) Salary or wages. (*g*) Civil service rating, if any. (*h*) Length of time in present position. (*i*) Total time in the employ of the present department or agency. (*j*) Total time in federal employ. (*k*) Detailed description of present duties. Include information as to the availability of a replacement or the time required to train one. (*l*) Length of deferment desired (until ———— (give date).

By order of the Secretary of War:

E. S. Adams,
Major General, the Adjutant General

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EMERGENCY MEDICAL EQUIPMENT

The Medical and Surgical Relief Committee of America, 420 Lexington Avenue, New York, sent eight emergency medical field sets, January 2, to medical directors of the Second Civilian Defense Region, comprising New York, New Jersey and Delaware. Each set consists of two portable cases equipped with instruments and supplies, which will be placed in hospitals and first aid posts in various locations, whence they can be readily transported to potential points of disaster. Plans are being made by the committee for a nationwide campaign to provide quantities of these sets in each of the nine civilian defense regions set up by the Office of Civilian Defense; it is estimated that seven hundred and twenty-four sets will be required to meet the needs of New York City alone.

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The pictures of patients with tuberculosis in our medical textbooks are those of emaciated and cachectic individuals when they should be those of apparently healthy specimens. It is in these apparently healthy specimens that disease is so often found and causes so much destruction. A. M. Dietrich, M.D., Del. Med. Jour., Aug., 1941.

SAY OTHER TREATMENTS FOR ERYSIPELAS MADE OBSOLETE BY SULFONAMIDE DRUGS

The prompt response of erysipelas to sulfanilamide or one of its derivatives make this the treatment of choice and renders other treatment measures obsolete, Robert E. Shank, M.D.; Richard W. Maxwell, M.D., and George S. Bozalis, M.D., St. Louis, declare in *The Journal of the American Medical Association* for December 27 in a report on the results they obtained in so treating 165 patients with this disease.

Erysipelas is a common bacterial infection of the skin caused by the hemolytic streptococcus. It is characterized by intense itching, burning and inflammation of the skin, which is swollen and painful. The condition is contagious. The authors explain that prior to the introduction of sulfanilamide, methods of treating the disease were notably unsatisfactory. Describing the results they obtained with their patients, they say:

"In no instance was the lesion ever seen to spread after the first thirty-six hours on chemotherapy (drug treatment). A small subcutaneous (under the skin) abscess was the only complication. There were no recurrences.

"In 84 patients an elevated admission temperature had returned to normal after twenty-four hours and remained normal. In 16 cases fever persisted over forty-eight hours but in no instance longer than four days.

"Sulfanilamide was found to be fairly toxic, particularly for the aged patients in this series. The new drug sulfabenamide, used experimentally for 34 patients, produced equally good results, without the usual toxic effects so common to the sulfonamide group of drugs. . . .

"There were 5 deaths in the group of 165, a mortality figure of 3 per cent. This compares with mortality rates of from 8 to 12 per cent before the use of sulfanilamide. . . . Patients over 60 years of age, with chronic heart and kidney disease, furnished 4 of the 5 fatalities among this group."

If somebody shoved me into the ring and up against Joe Louis, I wouldn't wait for him to sock me. I'd lay down and take the count — and stay there until the referee said the fight was over. And influenza (and tuberculosis, too) the same way. Paul B. Brooks, M.D., Health News, Feb. 17, 1941.

Original Articles

SENILE ECTASY

A Clinical Study of the Aging Human Heart
(Observations on Four Hundred Patients)

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CHICAGO

On February 20, 1936, five and one-half years ago, my associates and I organized the Heart Station at Mercy Hospital-Loyola University Clinics, Chicago, to conduct a detailed study of a large group of ambulatory cardiacs, in connection with the Outpatient Department of the Hospital. We established as our objective an investigation of the broad and, we felt, undeveloped problem of heart disease in the later decades of life. At the beginning, we charted no special course, simply endeavored through carefully taken histories, physical examinations, routine X-ray and electrocardiograms to gather as much information as possible, record our findings, summarize them, and then arrive at logical conclusions. Our work is still progressing, and while our ultimate aim is one thousand senile patients, we have accumulated such a vast amount of material, much of which we consider interesting and important, that we are herewith submitting it in the nature of a preliminary report. At the conclusion of the first year of this work we began to look for the answer to a group of important questions; to wit:

I. What are the most common types of heart disease encountered in human beings in the age group of fifty to eighty years?

II. What are the most common and the earliest symptoms in this age group?

III. What are the most common and consistent physical signs?

IV. Which antedates which?

V. How much diagnostic help is afforded by the X-ray? By the electrocardiogram?

VI. How accurate and important are percussion measurements?

VII. What is the "Immediate Prognosis" in the various individual types of heart disease encountered in senile individuals?

Our catechism did not end with these seven questions, but we believe they furnish ample material for this report. We do not maintain that we have the complete and final answer to any one of them, but our figures, observations, and conclusions, on an admitted formidable group of four hundred patients, are at least illuminating.

We are incorporating only one of our "Work Sheets" to establish the detail of information gathered on each individual patient.

-SENILE-ECTASY-

HRT STA NO	AGE	COLOR	SEX	CARDIO-VASCULAR SYMPTOMS: DYSPNEA	PAIN: STA.	PAIN: REF'D	COUGH	EDEMA	HEART CONSCIOUSNESS	EFFORT SYNDROME: MENTAL	EFFORT SYNDROME: PHYSICAL	PHYSICAL FINDINGS: RATE	BP: SYST.	BP: DIAST.	RHYTHM	PERCUSSION MEAS.: AORTA	PERCUSSION MEAS.: R. MAX. BORDER	PERCUSSION MEAS.: L. MAX. BORDER	AUSCULTATION: AORTIC	AUSCULTATION: MITRAL	AUSCULTATION: OTHER	ADMITTING DIAGNOSIS	X-RAY: AORTIC WIDTH	X-RAY: R. MAX. BORDER	X-RAY: L. MAX. BORDER	EKG FEATURES
741	67	W	F	+	0	0	0	V.V.	+	+	+	80	146	84	1	3.5	3.0	8.0	0	0	0	ARTERIOSCLEROTIC HRT. DIS & CHRONIC MYOCARD INSF.	5.5	4.1	8.2	MILD MYO DAMAGE
580	53	W	M	++	SUB STERN.	0	0	++	+	+	+	80	138	90	4	5.5	5.5	12.0	0	PEAK SYST	0	R.H.D. & MITRAL STENOSIS	4.0	8.0	9.5	AUR. FIBR. - DIG. EFFECT HEART BLOCK
787	68	W	F	+	0	0	0	V.V.	+	+	+	80	210	110	1	4.0	3.0	7.5	0	0	0	HYPERTENSIVE HEART DISEASE	4.7	4.8	7.5	CORONARY PATTERN
659	65	W	M	0	0	LEFT SHOULDER	0	0	+++	+	+	60	178	88	1	4.0	2.5	8.5	0	0	0	ARTERIOSCLEROTIC HRT DIS & CORONARY INSUFFICIENCY	6.5	4.7	9.5	CORONARY PATTERN
387	51	C	F	+	+	0	0	0	0	+	+	80	140	88	1	4.0	4.0	10.0	0	0	0	MENOPAUSE	4.0	3.8	7.5	NORMAL
109	82	W	M	+	ABDOMINAL	0	0	V.V.	0	+	+	56 to 80	170	110	4	5.8	5.0	11.0	0	0	0	ARTERIOSCLEROTIC HRT DIS	6.5 to 7.0	7.3	10.0	HEART BLOCK & MYOCARDIAL DAMAGE
745	68	W	M	+	0	0	0	0	+	+	+	100	118	80	1	6.5	3.0	12.0	0	SYST.	0	SYPHILITIC AORTITIS	8.7	3.2	10.3	MYOCARDIAL DAMAGE
655	51	W	F	+	VAGUE	0	+	PM	+	+	+	120	226	116	1	4.0	3.5	8.5	0	0	ALL 2nd Sound	DIABETES & HYPERTENSION	7.0	5.3	7.5	CORONARY TYPE & L. AXIS DEVIATION
733	75	C	M	+	+	0	0	+	+	+	+	74	170	110	1	6.8	4.0	9.5	0	SYST.	0	SYPHILITIC HRT. DIS.	7.0 to 10.0	5.2	10.0	OLD INFARCTION CORONARY DISEASE
745	62	W	F	+	NUB	0	0	OCCAS	+	+	+	88 to 112	150	50	3	5.3	2.0	9.5	SYST	SYST	0	THYROID HEART DIS	6.0	4.0	8.2	HEART BLOCK & CORONARY DISEASE
461	59	W	M	+	+	0	CHRONIC BRONCHITIS	0	0	+	+	72	190	94	1	5.5	4.5	12.5	0	0	0	HYPERTENSIVE HEART DISEASE	7.5	4.0	9.8	SINUS ARRHYTHMIA CORONARY INSUFFICIENCY & AXIS DEVIATION
465	56	C	M	+	0	0	BLOODY SPUTUM	0	0	+	+	76	128	80	1	7.5	4.5	10.0	DIAST.	ROUGH PAR	0	SYPHILITIC AORTIC ARTERYSM	10.5	8.2	6.5	FAIRLY NORMAL
74	67	C	F	+	0	0	+	0	0	0	0	88	160	80	1	4.5	3.0	6.5	0	0	0	MILD HYPERTENSIVE HEART DISEASE	5.0	4.0	10.0	CORONARY MORGANWING
69	51	C	F	0	+	0	+	+	+	+	+	74	180	90	1	6.5	3.5	9.0	0	0	0	HYPERTENSIVE HEART DISEASE	7.0	5.0	11.0	FAIRLY NORMAL
548	57	W	F	++	+	L. ARM & HAND	0	0	OCCAS	+	+	84	140	80	1	4.0	3.5	8.5	0	SOFT SYST	0	CORONARY HEART DISEASE	5.0	4.0	6.2	CORONARY TYPE & MYOCARDIAL DAMAGE AND ARRHYTHMIA
361	52	W	M	++	+	L. ARM	0	OCCAS	0	+	+	92	126	76	1	5.0	4.0	14.0	0	SOFT SYST	0	CARDIO-VASCULAR-RENAL DISEASE	6.0	5.5	9.5	SINUS ARRHYTHMIA & SEVERE MYOCARD CHANGE
700	63	W	F	+	+	HELD PT HAD CHEST INJURY	0	PM	0	0	+	80	164	38	1	5.0	3.0	9.5	DIAST	SYST	0	A N D E AORTIC MANIFICIENCY	6.5	5.6	8.2	CORONARY TYPE & MYOCARDIAL DAMAGE
493	55	W	M	0	+	0	0	0	0	0	0	80	134	86	1	4.5	3.0	9.0	0	0	0	NO ORGANIC HEART DISEASE	6.0	4.5	10.0	NORMAL
501	52	W	F	+	+++	0	0	+	0	0	0	68	140	84	1	4.0	3.5	9.0	0	0	0	NO ORGANIC HEART DISEASE R.H.D.	5.0	4.0	8.0	NOD MYOCARDIAL DAMAGE SINUS ARRHYTHMIA & PROLONGED A-C INTERVAL
533	68	W	M	+	0	0	0	0	0	- FEELS BETTER -		80	130	60	1	6.0	4.0	10.0	0	PRE SYST	A-V BLOCK	E MITRAL INVOL. (STENOSIS) R.H.D	7.0	6.0	8.2	CONDUCTION DEFECT
546	53	W	M	+++	+++	0	0	+	+	+	+	80	138	90	4	5.0	5.5	12.0	0	PRE SYST	0	E MITRAL STENOSIS	4.0	8.0	9.5	AURIC. FIBRILLATION DIGITALIS EFFECT
466	57	C	F	+++	+	0	+	0	++	+	+	94	180	100	1	8.5	5.0	12.0	DIAST	SYST	A-V ACCENT	SYPHILITIC AORTIC ARCH ANEURYSM	15.5	4.0	11.0	MILD MYOCARDIAL DAMAGE
536	60	W	F	+	IN L. BREAST & ARM	0	0	0	0	0	+	88	202	128	1	4.0	3.0	7.5	0	0	0	HYPERTENSIVE HEART DISEASE	6.6	3.5	10.0	MYOCARDIAL DAMAGE CORONARY NARROWING
713	54	W	F	POST CIBUM	LEFT BREAST	LEFT ARM	0	0	+	+	+	68	164	84	1	4.0	2.0	7.5	0	0	0	CORONARY ARTERY DISEASE	4.7	2.3	9.8	MILD MYOCARDIAL DAMAGE
649	50	W	F	OCCAS	+	NECK	0	V.V.	OCCAS.	0	0	80	180	100	1	4.5	3.0	12.0	0	0	0	HYPERTENSIVE HEART DISEASE	5.5	5.5	9.5	MILD MYOCARDIAL DAMAGE

NOTES & EXPLANATION:

DYSPNEA — ONE PLUS — MILD—AFTER MODERATE PHYSICAL EFFORT.
TWO PLUS — MORE SEVERE — AND WHILE AT REST.
THREE PLUS — MOST SEVERE — NOCTURNAL IN TYPE.

COUGH — ON CARDIAC BASIS ONLY.

HEART CONSCIOUSNESS
ONE PLUS INCREASED RATE.
TWO PLUS INCREASED FORCEFULNESS.
THREE PLUS COMBINATION of ONE & TWO.
FOUR PLUS ARHYTHMIAS.

EDEMA — PITTING EDEMA OF ANKLES—A.M. or P.M.
V.V. = VARICOSE VEINS.

RATE & B.P. — COMPUTED WHILE PATIENT IS SITTING & AT REST.

RHYTHM
ONE NORMAL SINUS RHYTHM.
TWO SINUS ARHYTHMIA.
THREE EXTRA SYSTOLES
FOUR AURIC. FIBRILLATION
FIVE HEART BLOCK (ALL DEGREES).

DIAGNOSIS-AMERICAN HEART ASSOCCIATION CRITERIA.

PERCUSSION — AORTA — ITS WIDTH IN 2nd INTERSPACE
R & L MAX. BORDERS — FROM MIDLINE TO MAXIMUM LATERAL BORDERS.

MEASUREMENTS — ARE RECORDED IN CM.

In summarizing these statistics, we will confine ourselves to answering the questions asked at the beginning of our problem.

Question No. I. What are the most common types of heart disease encountered in the age group of fifty to eighty years?

The charts supplied the following information:

	Patients	
Total number of patients studied	400	100%
Divided into:		
Hypertensive Heart Disease	113	28.2%
Arteriosclerotic heart disease		
Myocardial involvement predominating	72	18.0%
Coronary involvement predominating	52	13.0%
*Syphilitic heart disease	81	20.2%
Rheumatic heart disease		
Mitral involvement	42	10.5%
Aortic involvement	8	2.0%
Thyroid heart disease	10	2.5%
Cardio-vascular-renal disease	6	1.6%
No organic heart disease	13	3.2%
Color Distribution:		
White patients	287	71.8%
Colored patients	113	28.2%
Sex Distribution:		
Male	169	42.3%
Female	231	57.7%
Positive X-Ray Findings Were Shown In:	292	73.0%
Positive EKG Findings Were Shown as Follows:		
Positive myocardial changes	252	63.0%
Positive coronary changes	148	37.0%
Age Distribution:		
Between 50-55 years	126	31.5%
Between 56-60 years	104	26.0%
Between 61-65 years	86	21.5%
Between 66-70 years	55	13.7%
Between 71-75 years	24	6.0%
Between 76-80 years	2	0.5%
Over 80 years	3	0.7%

*This relatively high percentage of syphilitic heart disease is probably due to the large number of colored patients included in this survey.

Comment: It is, in our opinion, not coincidental but highly significant that Rheumatic Heart Disease constituted only 12½ per cent, and these figures strongly suggest that Rheumatic Heart Disease has a life expectancy which is distinctly curtailed.

Question No. II. What are the most common and the earliest subjective cardiac symptoms in this age group?

The answer must admit of wide variations, depending upon the specific type of heart disease, the degree of involvement, and the chamber of the heart primarily concerned. However, breaking the question down to various types of heart disease, our charts reveal the following as the earliest and most common symptoms:

1. Arteriosclerotic Heart Disease
 a. Heart Muscle Involvement
 a' Dyspnea 100%
 b' Heart Consciousness 65%
 b. Coronary Involvement
 a' Pain 84.3%
 b' Dyspnea 62.5%
2. Hypertensive Heart Disease
 a. Heart Consciousness 74.6%
 b. Dyspnea 74.6%
3. Syphilitic Heart Disease
 a. Dyspnea 82%
 b. Pain 88%
4. Inactive Rheumatic Heart Disease
 a. Heart Consciousness 45%
 b. Dyspnea 78%
5. Thyroid Heart Disease
 a. Heart Consciousness 83.3%
 b. Dyspnea 66.6%
6. Cardio-Vascular-Renal Disease
 a. Dyspnea 100%
 b. Pain 100%

Comment: We should like at this point to theorize a bit, purely from a clinical standpoint, on the interesting subject of Coronary Disease. We believe that Coronary Disease as encountered in this age group (fifty to eighty years) is, in the vast majority of instances, part and parcel of the process of senescence, that it goes hand in hand with heart muscle deterioration, that accordingly it belongs to and occurs most frequently in the 5th, 6th, 7th, and 8th decades and not, as quite commonly argued, in the earlier decades of life. It is the common pottage of senile decay, and almost constantly associated with minor symptoms and signs of myocardial wear.

We are convinced that we encounter, clinically, three quite distinctly differentiable types or stages of Coronary Disease:

1. *"Angina of Effort"* — Patients who admit the episode of precordial pain or distress with classical reference into the jaws or down the arms; brought on by physical effort or mental excitation; of brief duration, relieved quickly and effectively by coronary dilators; with no subsequent symptoms or signs and no immediate incapacitation.

2. *"Coronary Insufficiency"* — Frequent and prolonged attacks of coronary pain or distress, with or without an exciting instigating factor, lasting from minutes to hours; partially but not completely relieved by dilators; with no consistent electrocardiographic variables; and followed by no demonstrable symptoms or signs of myocardial invasion.

3. *"Coronary Occlusion with Myocardial Infarction."* With or without an inciting factor, but always associated with unmistakable symptoms and signs of shock, and electrocardiographic evidence of heart muscle invasion. We are not willing to even theorize on the mechanism or the differential pathology of these three types in view of the mass of evidence accumulating indicating that even "Angina of Effort" may have as its pathological background, occlusion of a coronary trunk.

Question No. III. What are the most common and consistent physical signs?

The answer to that question, too, must be broken down since the earliest and most consistent physical signs in heart disease past fifty, will depend upon the type of the disease. Our charts provide the following information:

1. Arteriosclerotic Heart Disease
 a. Altered configuration 65.2%
 b. Variations in rate 24.5%
 c. Variations in rhythm 20.0%
2. Hypertensive Heart Disease
 a. Altered configuration 81.7%
3. Syphilitic Heart Disease
 a. Altered configuration 94.0%
 b. Systolic and later diastolic basal murmurs 62.0%
4. Rheumatic Heart Disease
 a. Altered configuration 77.0%
 b. Murmurs 92.0%
5. Thyroid Heart Disease
 a. "Normal" configuration 84.0%
 b. Increased rate 100.0%
 c. Alterations in rhythm 66.0%

Comment: We should like at this point to stress the diagnostic importance of "Altered Configuration" of the heart in all types of heart disease encountered in this age group. We are convinced that the information obtained through careful percussion and verified by the X-ray is more helpful diagnostically than that afforded

by auscultation. Our work of the past five and one-half years has also given us some interesting data concerning the accuracy and reliability of percussion in determining the heart's borders, as compared with the X-ray. In deciding upon X-ray procedure in so large a graup of individuals, we had the choice of the following three:

1. Teleradiography (Two-meter plates)
2. Orthodioscopy
3. Telefluoroscopy (Two-meter tracings)

The first is accurate but expensive; the second is accurate but time consuming; so we decided upon the third. We constructed a fluoroscopic screen at seventy-two inches from the tube, and by drawing an image of the heart and the aorta, together with the important anatomical landmarks of the chest, on the fluoroscopic screen in the anteroposterior position, and later in the lighted room transferring that tracing to thin transparent paper, we had an economical and permanent record of the heart, as accurate approximately as a two-meter plate. A careful survey of four hundred such tracings, and a comparison with previously recorded percussion measurements leaves us with the following impressions:

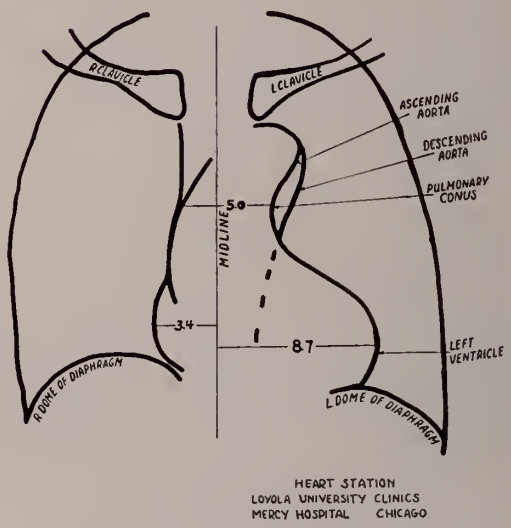
1. Percussion, carefully done by one with average experience, is roughly accurate. The right and left cardiac borders and the aortic width, one or all, may be off on the average one centimeter, considerably more of course in obese individuals. The direction of the error is usually on the plus side; that is, percussion measurements are larger than those elicited by telefluoroscopy.

2. In a negligible percentage (less than two per cent) the percussion measurements were so unsatisfactory that the proper configuration of the heart was missed entirely.

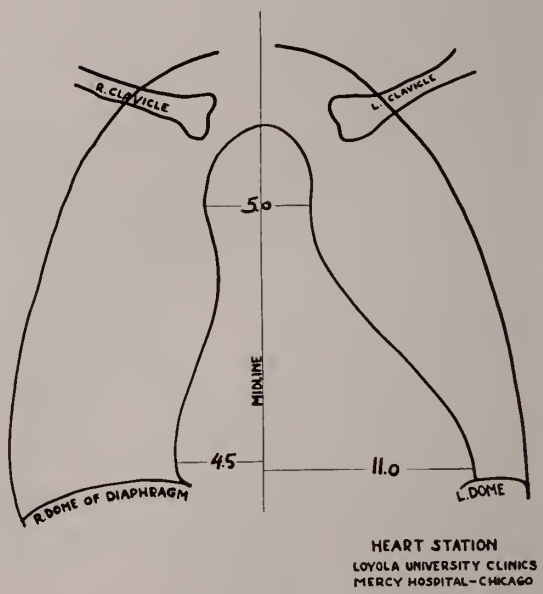
3. For the instruction of medical students in the art of percussion, and as an incentive to all men in the general practice of medicine, we recommend this telefluoroscopic check on routine cardiac measurements.

We should like to enumerate briefly the major alterations in the configuration of the heart in the various types of heart disease under consideration, as portrayed by the following tracings:

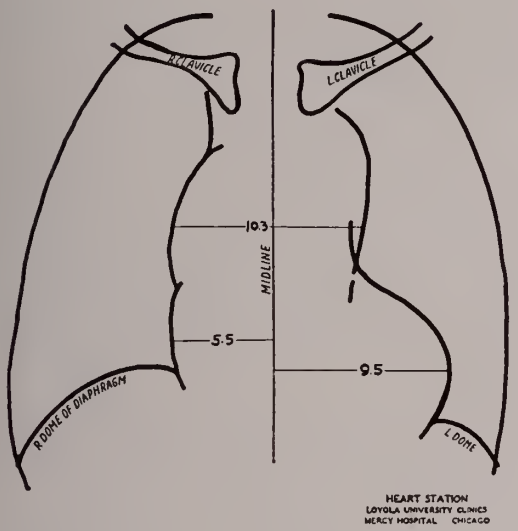
AORTIC SCLEROSIS



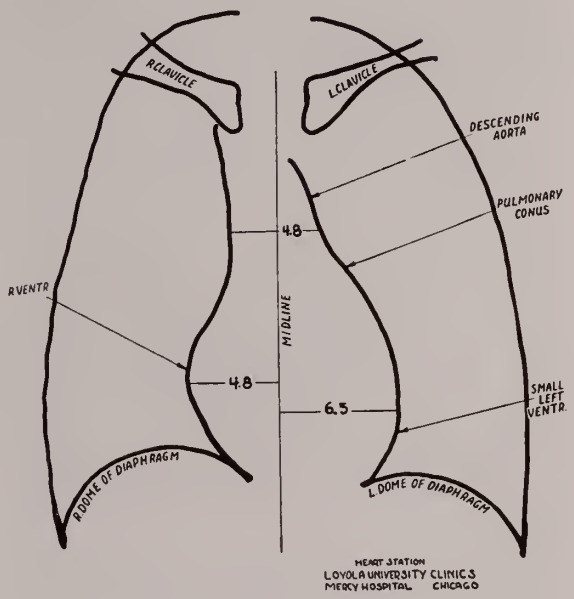
HYPERTENSIVE HEART DISEASE



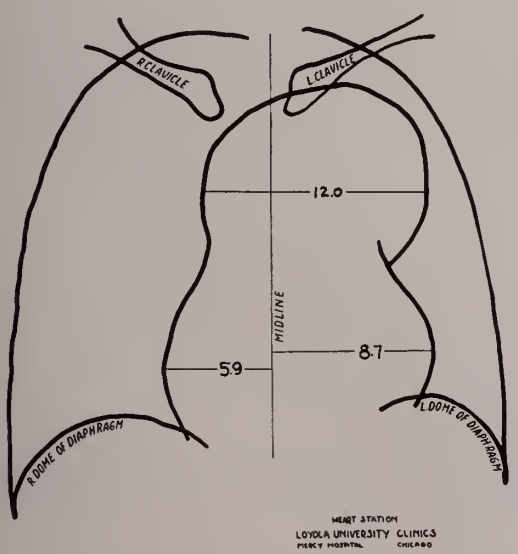
SYPHILITIC AORTITIS
(MESAORTITIS LUETICA)



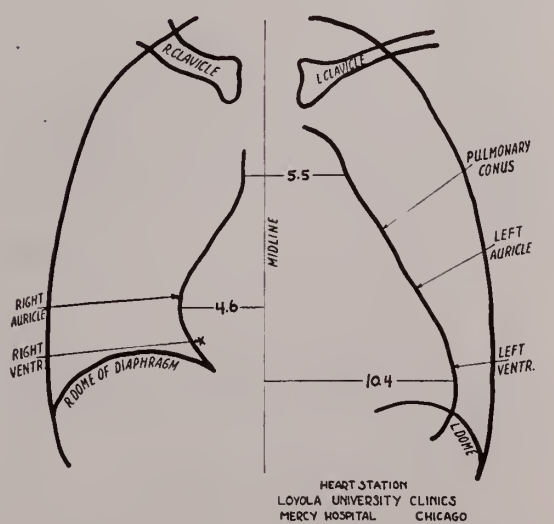
COMPENSATED MITRAL STENOSIS



AORTIC ARCH ANEURYSM
(SYPHILIS)



MITRAL CONFIGURATION



1. *Arteriosclerotic Heart Disease* — The alteration of configuration was moderate and consisted with some exceptions of a widening of the ascending portion and arch of the aorta, and a slight increase in the left ventricular spread.

2. *Hypertensive Heart Disease* — The alteration is essentially one of left ventricular hypertrophy. Incidentally, we were impressed with the prognostic significance of this enlargement. With only a few exceptions, the greater the hypertrophy the more advanced the disease and the poorer the outlook.

3. *Syphilitic Heart Disease* — Here the information gathered by percussion and telefluoroscopy was important and helpful. In the presence of only a positive history of Syphilis, a few subjective symptoms of cardiac invasion, such as aortic pain and dyspnea on effort, we encountered in 94 per cent of syphilitic hearts a definitely widened aorta. It was furthermore interesting to note that, so long as there was no demonstrable insufficiency of the aortic valve, a left ventricle of normal configuration was consistently discovered in a syphilitic heart with a very materially widened aorta. We encountered several large syphilitic aneurysms of the aorta, without signs of aortic insufficiency, and with normal left ventricular dimensions.

4. *Rheumatic Heart Disease* — It was in this type of heart disease that we received most diagnostic and differential diagnostic help, from percussion and telefluoroscopy. It is sometimes difficult to "time" a mitral murmur and thereby differentiate a mitral insufficiency from a true stenosis. The altered configuration as brought out by percussion and telefluoroscopy, renders the diagnosis relatively simple. Whereas the former is associated with an increased transverse diameter, the latter (mitral stenosis) shows the normal left auriculo-ventricular groove changed from a concavity to a convexity, and the right ventricle preponderantly convex.

5. *Thyroid Heart Disease* — This type of heart disease, with its subjective symptoms of heart consciousness, its tachycardia, auricular fibrillation and often a relatively mitral murmur, can be very confusing clinically, but as a rule differentiated from Rheumatic Mitral Disease by its unaltered contours.

DIAGNOSTIC IMPORTANCE OF ELECTROCARDIOGRAMS IN HEART DISEASE PAST FIFTY

Electrocardiography supplies more diagnostic information in these types of heart disease than in any other age group. Our charts reveal the following data:

1. *Arteriosclerotic Heart Disease:* In this type of heart disease, with symptoms and signs of heart muscle impairment in the foreground, and coronary symptoms negligible, the electrocardiographic changes are essentially those of heart muscle slurring. The degree or extent of slurring, however, is an important and diagnostic criterion. Alterations in rate, we found, are an interesting study in these senile hearts; to wit: 25 per cent showed a definite alteration of rate from an accepted norm, with bradycardias exceeding tachycardias by 10 per cent. Alterations in rhythm as certified by the electrocardiogram occurred in 20 per cent of all senile hearts and were divided as follows:

a. Ventricular extrasystoles ...10 per cent

b. Auricular fibrillation 6 per cent

c. Auricular extrasystoles 0.5 per cent

d. Heart block (all degrees) ... 1.5 per cent

The remainder were a non-organic sinus arrhythmia. In senile hearts with coronary symptoms prominent, the electrocardiogram revealed the following:

1. In so-called "Angina of Effort" (a brief episode with no subsequent symptoms) T wave changes in 3 per cent.

2. In the intermediary type of Coronary Disease (with an episode of long duration but no evidence of infarction) T wave changes in 25 per cent.

3. In instances with frank occlusion and infarction (associated with shock) T wave changes in 90 per cent of cases.

2. *Hypertensive Heart Disease:* Left axis deviation is the rule and is encountered in 82 per cent of all graphs. In addition, T_1 and T_2 inversion and an upright T_3 are commonly encountered. The RST segments in leads 1 and 2 are depressed, and elevated in lead 3.

3. *Syphilitic Heart Disease:* Here the electrocardiographic changes consisted essentially of a left axis deviation and heart muscle slurring. Even in the presence of coronary symptoms due to narrowing of the coronary ostia T wave changes were unreliable.

4. *Thyroid Heart Disease:* This condition shows the following electrocardiographic changes:

a. Increased rate almost always, from a mild to severe degree.

b. Ventricular extrasystoles in 16 per cent of cases.

c. Auricular fibrillation so commonly that we are inclined to believe this type of irregularity occurs more frequently in thyroid hearts than in any other, not excepting the arteriosclerotic type.

5. *Rheumatic Heart Disease:* The electrocardiographic changes were chiefly as follows: right axis deviation occasionally in pure mitral stenosis, left axis deviation in aortic insufficiency; with heart muscle slurring in both types. The most common and consistent electrocardiographic change encountered in all types of Rheumatic Heart Disease was a conduction disturbance in the form of heart block. However, we encountered heart block in only 4 per cent of well compensated Rheumatic Heart Disease in this age group since practically all were in the quiescent stage.

Question No. IV. Do cardiac symptoms antedate signs or vice versa?

This admits of no concise answer. Possibly our charts would have supplied a more satisfactory answer to the question "Do symptoms or signs *predominate* in the senile types of heart disease?" Applying *that* question to our sundry types of heart disease we find:

1. *Arteriosclerotic Heart Disease:* As a rule, we encounter subjective symptoms of both heart muscle deterioration and coronary distress, with no appreciable demonstrable alteration of the heart's contours and frequently no physical signs.

2. *Hypertensive Heart Disease:* Physical signs, particularly an altered configuration, are demonstrable very early in the course of the disease, frequently in the *entire abscence* of subjective cardiac symptoms.

3. *Rheumatic Heart Disease:* In its quiescent stage, years after the invasion, this may be entirely symptom free and yet show definite contour alterations.

4. *Syphilitic Heart Disease:* The heart shows minor yet definite alterations in contour early in its invasion, while subjective symptoms are negligible.

5. *Thyroid Heart Disease:* Assuming the heart was anatomically and organically normal prior to the influence of thyroid hyperactivity, the symptoms are distinctly in the foreground.

Question No. VII. What is the Immediate Prognosis? Potential efficiency?

This is so great a variable in heart disease in this age group that it is possibly foolhardy even to theorize upon it. However, referring again to our charts, we are left with the following impressions:

1. *Arteriosclerotic Heart Disease:* When dealing primarily with a heart muscle deterioration, with coronary symptoms absent, we frequently encounter a fairly high mental capacity without untoward effects. Physical effort, on the other hand, leads to incapacitation. In the presence of coronary symptoms and signs, both physical and mental activities are sharply curtailed.

2. *Hypertensive Heart Disease:* Even with considerable symptoms and signs, it is compatible with not only years of life, but what is more important, livelihood. It is interesting to note what physical and mental strains a hypertensive heart can meet and effectively cope with. The degree of left ventricular hypertrophy is a rough index of potential vital capacity.

3. *Syphilitic Heart Disease:* This condition presents an unfavorable outlook, not only as regards duration of life, but the physical potential as well. The appearance of symptoms and signs of syphilitic aortitis is usually associated with a diminution of physical endurance. Very considerable mental activity and sustained mental strain are, however, compatible with life and well-being.

4. *Thyroid Heart Disease:* This condition is compatible not only with years of life but also with a high potential efficiency.

5. *Rheumatic Heart Disease:* The "Spill-Over" from earlier decades predicates an unfavorable prognosis. Except in well compensated and uncomplicated mitral lesions, vital capacity is markedly diminished and physical overstrain leads to recurrent decompensations.

SUMMARY

This is a preliminary report of an investigation of four hundred of a total of one thousand cardiacs in the age group of fifty to eighty years. The material gathered consumed five and one-half years and embodies case histories, physical examinations, percussion measurements checked by telefluoroscopies and electrocardiograms. This

incomplete study led to the following conclusions:

1. The most common forms of heart disease encountered in senescence are:
 a. Arteriosclerotic
 b. Hypertensive
 c. Syphilitic
 d. Rheumatic
 e. Thyroid

2. The earliest subjective symptoms are:
 a. Dyspnea
 b. Heart consciousness
 c. Pain

3. The outstanding and most important diagnostic physical sign is altered configuration of the heart.

4. Percussion carefully carried out is reliable and has greater diagnostic value than auscultation.

5. Telefluoroscopy is a simple, economical and practical diagnostic adjunct to percussion.

6. The electrocardiograph furnishes more help in this age group than in any other types or heart disease.

7. It is possible and practical to differentiate clinically three different stages of Coronary Disease.

8. A fair working knowledge concerning the immediate prognosis of the various individual types of heart disease encountered in senile individuals has been presented herewith.

In the preparation of this study of Senile Ecstasy, we hereby acknowledge our indebtedness to the following and express our sincere appreciation for their kind cooperation:

1. The Superintendent of Mercy Hospital of Chicago, Sister Mary Ludwina.

2. Sister Mary Flora, Director of the Physio-Therapy Department of Mercy Hospital.

3. Miss Elizabeth Sheridan, R.N., Director of the Dispensary of Mercy Hospital.

4. The personnel of the X-ray Department of Mercy Hospital.

5. The Grey Ladies Cardiac Unit of Mercy Hospital.

6. Sister Mary Ethelreda.

7. Dr. George Hellmuth.

THE SURGICAL TREATMENT OF DEAFNESS

George E. Shambaugh, Jr., M. D.
CHICAGO

Otosclerosis is the most important cause for progressive conduction deafness in adult life. A study of the causes of deafness among the members of the Washington, D. C. League of the Hard of Hearing made by me in 1933 showed that 70% were deafened from otosclerosis. A similar study carried out in Chicago gave similar results. The histologic study of temporal bones confirms the great frequency of otosclerosis.

The cause of otosclerosis is not known. The pathologic lesion consists of a focus of spongy new-formed bone in the ivory-like bony capsule surrounding the labyrinth of the inner ear. This focus of spongy bone occurs most often just in front of the oval window, and as it slowly enlarges it finally grows across the oval window onto the foot-plate of the stapes resulting in a firm bony ankylosis of the stapes to the margins of the oval window.

The loss of hearing in otosclerosis is due to the stapes ankylosis which prevents air-borne sounds from reaching the inner ear from the drum membrane and ossicular chain. Only sounds loud enough to cause the skull to vibrate can be carried directly through the bone to the inner ear.

There is no medical treatment for otosclerosis, which can either improve the hearing or arrest the slowly progressing loss of the ability to hear air-conducted sounds. Finally an electrical hearing aid becomes necessary to amplify and carry these sounds to the bones of the skull so that they may reach the inner ear and the still active nerve of hearing.

Soon after otosclerosis was first described in 1857 by Toynbee otologists began to search for some method of removing the obstruction to sound conduction. The surgical treatment of otosclerosis has been a long, slow development beginning with Kessel who in 1876 attempted unsuccessfully to remove the ankylosed stapes. In 1897 Passow made a small trephine opening in the promontory to take the place of the occluded oval window, and obtained a definite, but

From the Wesley Memorial Hospital and Northwestern University Medical School.

Read before the Illinois State Medical Society Meeting, Peoria, May 1940. Revised Dec. 1941.

only temporary improvement in hearing. Barany in 1910, Jenkins in 1913 and Holmgren from 1917 to the present day, as well as several others, attempted to improve the hearing in otosclerosis by making a new window into the labyrinth but altho there was nearly always an immediate improvement in hearing it was soon lost by bony closure of the new window.

In 1924 Sourdille devised a complicated and ingenious three or four stage operation which for the first time began to give a few permanent improvements in hearing. However, because the series of operations required a year or longer to complete and because bony closure of the new window still occurred in many cases, the Sourdille operation was not very practical.

In 1938 Lempert published his first results with a new one-stage operation for otosclerosis. In his latest report in 1940 Lempert had operated 120 patients with a lasting hearing improvement in 69 or 58%. Lempert has called his operation the "fenestration operation."

Lempert described his original technic in detail in his first publication in July 1938. Since then a few modifications have been made by him, the most important being the removal of the incus and the making of the new window or fenestrata into the ampullated end of the horizontal semicircular canal where it opens into the dome of the vestibule. Early in 1940 I introduced the use of constant irrigation while making the fenestra, in order to wash away every particle of bone dust, and late in 1940 I introduced the use of a binocular dissecting microscope giving a magnification of 7 X, while making the fenestrax in order to improve the visualization of the very tiny and delicate structures. Otherwise I have followed Lempert's technic in all respects.

The fenestration operation as I now do it is performed under avertin anesthesia. The endaural approach is used. The mastoid cells are partially removed to expose the incus and head of the malleus. The incudomalleolar joint is separated and the head of the malleus is amputated. The incus is left in place to prevent bone chips from falling into the middle ear cavity. The bony superior and posterior external auditory meatus wall is then removed leaving the epidermal lining intact with Shrapnell's membrane and the pars tensa of the drum membrane. Since the skin of the meatus is extremely thin and delicate where it joins Shrapnell's membrane, this part of the procedure requires the utmost patience and care.

The bony horizontal semicircular canal is now clearly exposed by removal of the cellular bone from around it. The skin of the superior and posterior meatal wall is freed by appropriate incisions so that it may be turned up and back as a flap continuous with the drum membrane, to cover the horizontal semicircular canal. This completed flap must be intact without tears or perforations so that the fenestra which is about to be made may be covered with a viable membrane with an intact blood supply, continuous with the drum membrane. If the flap is torn or perforated the operation must be discontinued.

The final step in the operation is the most difficult, the most important and the most delicate and is performed in a perfectly bloodless field under the binocular dissecting microscope. A flowing film of warmed sterile normal saline enters the operative cavity thru a small flexible silver tube, and is removed thru a second tiny suction tube so that the surface of the bony horizontal canal is kept immaculately clean and free from bone dust. The incus is now removed and discarded. With a dental finishing burr the bony covering of the ampulla of the horizontal semicircular canal is slowly removed until only a very thin transparent layer of the endosteal bone remains. A few more gentle strokes with the burr pulverizes this thin layer of bone. Tiny curved dental searchers are used to remove the pulverized bone adherent to the underlying endosteum, until the perilymph space lies widely exposed, with the delicate transparent tube of the membranous labyrinth floating in it. Rupture of the extremely fragile membraneous labyrinth would ruin the result and must be avoided. The completed fenestrum lies immediately above the oval window, separated from it only by the facial nerve in its bony canal. The new window measures 2 x 4 mm. and is slightly larger than the oval window.

The previously prepared skin flap is now turned back and up to cover the new fenestra, it is held firmly in place with paraffin mesh gauze packs and the operation is completed.

The packs are removed on the fifth post-operative day, the patient returns home on the 7th or 9th post-operative day and returns for sterile dressings until the operative cavity is completely

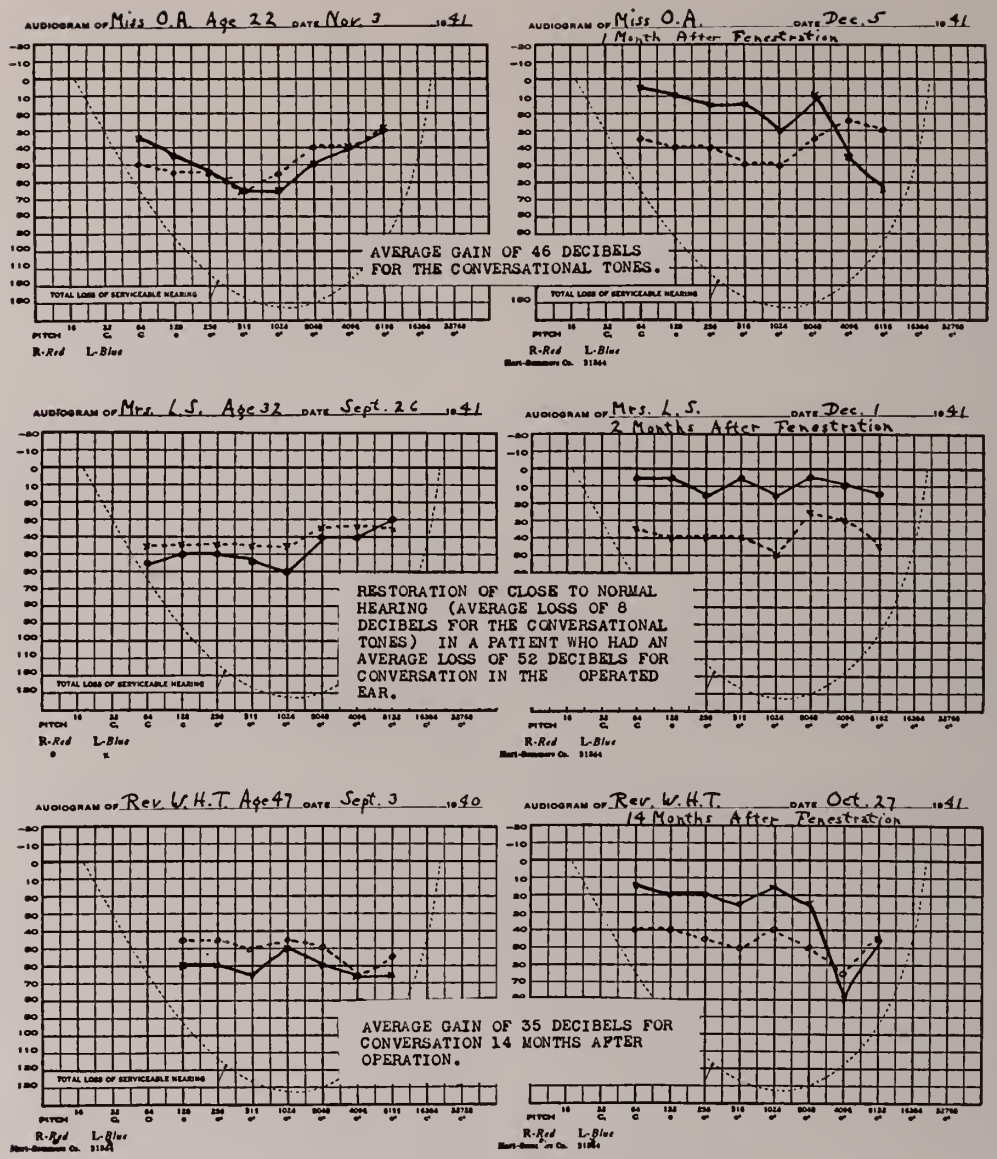


Figure 1. Audiograms before and after fenestration.

epidermized and dry, occurring on the average 8 to 10 weeks after the operation.

The hearing which is usually noticeably better immediately after the operation, declines during the first week, and climbs again after the packing is removed, reaching its greatest improvement two to six months after the operation.

The degree of hearing improvement varies from a restoration of close to normal hearing in some persons who had lost 50% of their serviceable hearing (Fig. 1.) to all grades of lesser degrees of improvement depending partly upon the pre-operative loss and the condition of the nerve of hearing and partly upon the amount of post-operative sterile labyrinthitis that occurs to a greater or lesser degree in every case. In the great majority of cases the hearing resulting from the operation surpasses that secured from a hearing aid, in addition to being free from the distortion and static of the hearing aid; it is "natural" hearing.

The operation is not successful in every case. Out of 146 operations which I have done in the past 3½ years, the post-operative labyrinthitis was sufficiently intense to result in a permanent depression of hearing in the operated ear in two

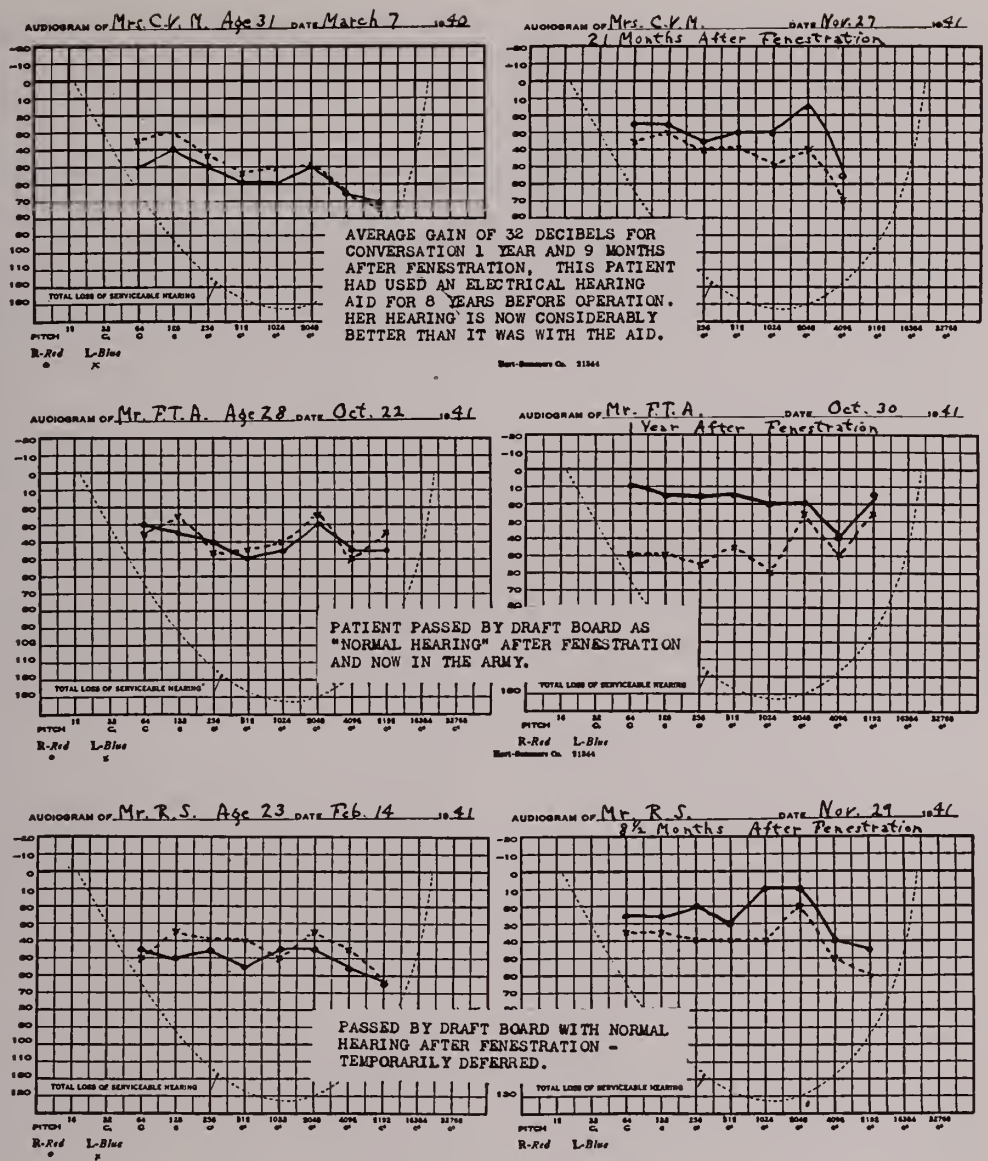


Figure 2. Audiograms before and after fenestration.

cases. Fortunately the worst hearing ear had been operated in both instances so that the loss was not of serious consequence to the patient. Because of this unavoidable, tho slight, possibility, the poorer hearing ear should always be preferred for operation.

In a small proportion of cases the newly created fenestra closes and the hearing improvement declines to the pre-operative level. In my experience in 116 consecutive original operations bony closure, when it occurred, always began within the first 6 or 7 months after operation, and generally within the first 4 months. Thereafter a fenestra that is open with a maintained hearing improvement will apparently remain open permanently. Should the fenestra close within the first 6 months it may be reopened in a second operation. This was done in 18 cases, 15 of which now have a hearing improvement that appears to be permanent.

The fenestration operation is indicated in patients with bilateral conduction deafness due to stapes fixation sufficient to constitute a handicap. The nerve of hearing must be intact for

the portion of the tone range used in hearing conversation, and this is determined by the bone conduction audiogram. The ear must be free from suppuration, the drum membrane must be intact. The patient should be in good health with a negative Wasserman and he must plan to remain under observation for two months after the operation since the after-care is of vital importance to a good result and cannot be delegated to some one else. The surgeon must first master the intricate and delicate technic of the operation on the cadaver before he can expect to secure satisfactory results on the patient.

The results of the fenestration operation in my 3½ years experience have been as follows:

A total of 146 operations on 116 patients were performed, with no fatalities and no serious complications. In 19 cases the original operation was revised because of closure of a fenestra, while 11 patients had both ears operated.

The chief annoyance after operation was dizziness, present immediately after operation in nearly every case, usually disappearing within a few weeks, but occasionally noticeable as long as a year after operation. This dizziness is due to irritation of the vestibular nerve ending in the horizontal semicircular canal and is noticeable chiefly on quick movements. There were 4 cases of transient facial paresis beginning one to two weeks after operation and clearing up completely in another one to two weeks. In 2 cases a post-operative sterile labyrinthitis resulted in a permanent further loss of hearing amounting to 18 decibels in one, 13 decibels in the other, for the conversational frequencies.

Of the 116 patients operated, 103 or 89% now have a hearing improvement greater than 10 decibels above the pre-operative level for the conversational tones. The average gain was 26.5 decibels, and the greatest gain in any case was 46 decibels for the conversational frequencies. (Fig. 1.) In 9 patients the hearing is within 10 decibels of the pre-operative level and is therefore essentially unchanged.

The table compares the results obtained with the original Lempert technic, with the results when constant irrigation alone, and when irrigation and the microscope were added to the technic. These results do not include the revisions, which bring the good results for the entire group to slightly better than 90%.

CONCLUSIONS

1. The fenestration operation offers a means of restoring a major part of the hearing loss in deafness due to stapes fixation.

2. The problem of bony closure of the new window has been largely solved by the technic described by Lempert and modified by the addition of irrigation and the microscope while making the fenestra.

3. The degree of hearing improvement after the fenestration operation generally surpasses that secured from a hearing aid.

4. With the recent improvements in technic good results have been obtained in 89% of properly selected cases.

5. A hearing improvement maintained for more than six months after the fenestration operation may be regarded as probably permanent.

In 88% of patients operated more than six months there is a good hearing result.

6. The fenestration operation properly done carries little risk to life and health and no risk to hearing if the poorer hearing ear is selected for operation.

122 South Michigan Ave.

Tuberculosis does not recognize appeasement. Only through the cooperation and alertness of all can we stop this needless sacrifice of life. Each case of tuberculosis is a result of the carelessness of another case. We have no known specific that can be used to break this vicious cycle rapidly, but our known available means, if properly used, will slowly eradicate this disease. Alfred M. Dietrich, M.D., Delaware State Med. Jour., Aug., 1941.

The path to the sanatorium must be made easy for the patient and his family. The social investigation should make this its primary function. It should not be a search for resources to be exhausted before the community assumes the cost. The great majority of cases come from families in the low income groups with little if any savings. Treatment is expensive. Insistence upon the use of all the family resources means impoverishment and they may become community charges for rent, food, and clothing. A family is wrecked. The prospect of this is one of the chief deterrents to early hospitalization and to continued stay until the disease is arrested. Edward S. Godfrey, M.D, New York State Commissioner of Health.

THE MEDICAL CARE OF PUBLIC ASSISTANCE RECIPIENTS

Charles H. Phifer, M.D.
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This has become one of the leading major medical problems in the United States since the depression. It is nation wide in scope. It obviously is a larger problem in some states than in others. It is particularly so in the state of Illinois where this economic catastrophe played tremendous havoc. Its immediate effect was to cause about 1,300,000 people to be deprived of their livelihood and to be dependent on public assistance for the necessities of life. Careful constructive procedures and surveys of these people are made to determine their age, their health, their physical and mental handicaps, their race, their employment ability. Likewise extensive and constructive efforts at placement in employment for those capable of working leave us at the present time with about 800,000 people dependent on public assistance. Statistics indicate that there are about 25,000 of these residing in the second councilor district of the Illinois State Medical Society. It would thus seem only fair to assume that inasmuch as the number of cases remains this high after eleven years of continuous constructive efforts to reduce the number of dependents, it augurs well to remain a permanent affair, and with the trends that prevail today, the tendency of the case load will be to increase rather than to decrease.

Careful analytical studies have classified these people in this state into five different categories, viz, old age assistance, aid to dependent children, the blind pension, direct relief, and W.P.A.

While all of these people are dependent on public assistance, the administrative procedure covering the management of some of these categories varies in some detail.

The old age assistance, the aid to dependent children and the blind are included in the social security act and are financed by equally matched federal and state funds. In order for a state to participate in this federal program, it must pass an enabling act that conforms with that category of the social security act in which it wishes to participate.

The state of Illinois has passed such legislation covering the old age assistance and the aid to dependent children. We did not, however, pass an enabling act covering the blind.

The Advisory Committee of the Illinois State Medical Society has assisted the Department of Public Welfare of the State of Illinois in drafting a program for the medical care of the old age assistance recipients and the aid to dependent children program. Each county society has appointed a medical advisory committee to help administer this program locally. It is sincerely hoped that the members of these committees will devote the necessary time, interest and cooperation in this civic project, to insure good medical care for these people as well as reflect credit upon the Department of Public Welfare and the Illinois State Medical Society. The drafting of the social security act with its provisions represents the first recognition for necessity of permanent care for certain groups of people. There remains another large group of recipients classified as Relief, W.P.A. and the blind, for which there is no organized state program to provide medical care.

The only attempt at a program of this type was established in 1934 under the Illinois Emergency Relief Commission. It was discontinued for want of funds when federal money was withdrawn from the state in 1936. This program while possessing many merits lacked the most essential thing that these programs need to make them workable, viz., proper supervision and assistance by county medical advisory committees.

The picture in this state became confused and more complicated in July 1936 when the Illinois legislature voted to shift the responsibility for administration of relief from 102 county administrators to 1,455 local governmental units, viz., 1,437 townships, 17 county Boards of Commission and one municipality, Chicago. Each of these operates its own type of relief as well as medical care. Many of these permit of the free choice of physician by clients while others have contract physicians. Many have no provision for medical care.

The one municipality, Chicago, has one of the most efficient and renowned medical programs for relief clients in the United States. Its program is a modified form of the one that the Illinois Emergency Relief Commission drafted. It has operated continuously since

1934. It has been carefully supervised and directed by a medical advisory committee of the Chicago Medical Society and representatives of the Chicago Relief Administration. Twenty-six hundred physicians participate in it. Its constructive and harmonious work has attracted the attention of the Departments of Public Welfare and Relief Administration throughout these United States.

The W.P.A. group constitute a distinct entity among these recipients. Their income is so low that they are unable to pay for their own medical care. This means that the only resources for medical care that are available for them under the present status are the county physicians' service, or where voluntary services in the community are able to provide care for them without charge. It should be remembered that the present status of the administration of relief in Illinois, while it may not intend to do so, gives a distorted picture of our relief question. The effect of decentralization in this manner not only gives a false impression of the number of people on relief, but likewise of the necessity for a state wide program. It also greatly increases the cost of administration. There is no standard type of relief, nor standard of medical care. It is obviously harder to develop a good program for medical care under these conditions. This does not, however, minimize the necessity for nor reduce the responsibility for its needs. The number of people involved at present as well as the increasing demand for well organized permanent medical care for these recipients, make it a subject to be given very careful consideration by your State Medical Society.

It is stated that some few physicians fear this question because of its social aspects. It is my opinion that there is a vast difference between rendering medical care to state wards on a carefully regulated medical program drafted with thoughtful scrutiny by your medical societies and the assisting agencies and the passing of national and state legislation embracing compulsory medical care for all classes of people.

The present arrangement for medical care for relief and W.P.A. recipients in this state is not satisfactory to the majority of physicians. It is true that in a few communities the working agreement with the local administration may be agreeable. We should not forget that there are over 10,000 physicians in this state; we should think in terms of all the members of the medical profession, and not alone of those few communities where conditions are workable. The individual physician is powerless in affairs of this nature. The authority for these projects can best be arranged through your state medical society and the administering agency. They should be on a state wide basis.

Your State Medical Society Journal has for many years carried some very valuable contributions on medical economics. In the interim, however, we have overlooked a very practical problem for the members of our profession in not planning a good state wide program for medical service to these recipients. In Chicago this service on a more restricted basis has paid over $3,000,000 in seven years to the physicians who participated in the program of Illinois Emergency Relief Commission and Chicago Relief Administration.

It is true that the compensation for medical care in all programs for public assistance recipients is limited. It should be recalled that they are awarded only sufficient money to furnish the bare necessities of life, food, clothing, housing and medical care. It is also true that the load to compensate these governmental wards is frequently too great for any one agency to assume the responsibility. It is for that reason that federal, state and local funds are frequently necessary to finance these programs throughout the United States. The tendency is to place the responsibility for administration of these programs with the State Department of Public Welfare rather than with the local governmental units. Experience throughout the county shows that this procedure speaks for efficiency of administration, and conservation of funds, and prevents political interference. The administration is faced with the problem of providing adequate medical care within the limits of funds.

It is my opinion that there should be a program for medical care covering all of these people; that there should be free choice of physician, providing the physician so designated cares to participate; that there should be a uniform fee schedule covering all types of medical and surgical services to all types of recipients.

The medical profession has always provided high standards of medical care for all the people. In this group of recipients we must as-

sume the responsibility for helping draft these programs and maintaining a pleasant working relationship between the administrating agency and the medical profession.

The medical advisory committees, state and county, must devote adequate time, and careful constructive thinking to help guide and direct these programs if they are to prevail. We can in this manner provide good medical care for these recipients, and protect the public funds, as well as the interests of the members of the medical profession.

ANALYSIS OF PRESBYOPIA

Ralph H. Woods, M.D.
LA SALLE

Modified Donders' Table

Age	20	25	30	35	40	45	50	55	60
P.p. (inches)	4	5	6	8	10	13	16	23	40
Amp. (Diop.)	10	8	7	5	4	3	2½	1¾	1

In 1866 The Anomalies of Refraction by Frans Cornelius Donders was translated into English and universally accepted and heralded as a great advance in Ophthalmology. This was just seventy-five years ago.

Unfortunately the physicians of that time and since that time have failed to grasp the practical application of Donders' teachings. As a matter of fact, books on the subject of refraction have given us but little working data, until "Cardinals of Refraction" was published in 1937.

About fifty years ago Alfred E. Prince of Springfield, Illinois an original investigator, saw that Donders' studies were extremely necessary in routine refractions. He laid out Donders' age, punctum proximum, and amplitude table on a stick carrying a slide target. Even with this simple easily manipulated device requiring no mental effort on the part of the examiner the measurement of the amplitude of accommodation has not been universally used. It is quite stimulating to know that prominent eastern physicians are now advocating this procedure routinely.

Presented before the Section on Eye, Ear, Nose and Throat, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 21, 1941.

If each eye can be measured alone, why not the two eyes at once? The Ampliometer serves this purpose.

A forerunner of this device was introduced by an Optician shortly after Prince came out with his rule. Its objection was its arbitrary graduation, so about ten years ago a Model T Ford oil gauge was calibrated to closely agree with the Prince Rule to measure the two eyes at the same time. The Ampliometer is the result of this experiment. With this simple low priced device one determines any deficiency in the amplitude of accommodation and at the same stroke determines if the punctum proximum of convergence is at the same distance as the punctum proximum of accommodation by simply turning over the test card presenting to the eyes a vertical line of type. This vertical line of type should stay single at the punctum proximum of accommodation.

This vertical line of type has a black dot at its center. Holding a 6° prism base up or down over one eye will put two dots on the line. Should there be two lines there is a convergence deficiency. Should there remain one line and one dot one eye is repressing.

Ascertaining the amplitude of accommodation is as essential as determining the static refraction for the reason there is such a condition as presbyopia in children (probably a bilateral ciliary paralysis) and occasionally also early presbyopia in young adults.

This condition can only be determined by measurement of the power of accommodation, following a carefully done manifest refraction.

Every eye case entering a practitioners office is potentially one of pathology, possibly not ocular pathology but of some systemic disturbance manifesting itself first in a disturbance of vision. Newspaper advertising has made the public eye conscious so naturally a lay person with a visual disturbance thinks early of glasses as the remedy.

The Ophthalmologists first duty is diagnosis; his last thought, prescribing lenses.

Eliminating any ocular or contributing systemic pathology, then doing a precise manifest refraction, determining the abduction, adduction, hyper and hypo duction, one is ready to measure the amplitude of accommodation, amplitude of convergence, and reserve convergence.

Disregard any findings with the Maddox rod.

This space does not permit going into these muscle measurements or explaining why the Maddox rod is useless in determining muscle function in discomfort cases.

There are four factors outstandingly essential to secure comfort to all eye workers.

1. (a) Center all minus lenses *out* two or three millimeters.
 (b) Center all plus lenses *in* for the near working distance, or even more.
2. Add enough prism base in to secure synkinesis (determined by adduction, reserve convergence, and amplitude of convergence.
3. Increase plus correction to tolerance if there is an excessive adduction and reserve convergence to secure synkinesis.
4. Presbyopic scales should be centered *in* two millimeters more than the distance correction to secure a little prism base in.
5. Give just enough plus in the presbyopic correction to leave one diopter of reserve accommodation.

In this brief period we can only consider paragraph No. 5.

With the precise ametropic correction in the trial frame, pre cycloplegic preferred, the patient is asked to show the exact distance at which he wishes to work. It will be at or near 13 or 16 inches.

May we say he chooses thirteen inches. To maintain vision at that distance he must have at all times one diopter of his own accommodation in reserve.

To see at thirteen inches requires three diopters. To have one diopter in reserve calls for four diopters in all. The dioptric equivalent of four diopters is ten inches. Ten inches is then established as a punctum proximum for comfortable vision at 13 inches.

It is not at all necessary to ask the patient his age. If he reads 5 point type at 10 inches we know from Donders' table he is approximately 40 years of age or less.

Should he not read the 5 point type set at 10 inches, plus sphers are added to each eye simultaneously until the blur is just lifted. The target is then pushed back to 13 inches. The type then clears. He then should read the 100% line on the Lebensohn reading chart at 14 inches.

In the final check it may be necessary to alter the presbyopic addition by a quarter diopter with a plus or minus. By noting the strength of our "add" and referring to the Accommodation table we can tell the patient his approximate age.

The following table is self explanatory. It shows the age, the amplitude for that age and why a given power is added to maintain one diopter in reserve for 13 inches.

Age	p.p.	Amp.	New p.p.	Add.	Reserve
45	13 in.	3	10 in.	+1.00	1.00
50	16 in.	2½	10 in.	+1.50	1.00
55	23 in.	1¾	10 in.	+2.25	1.00
60	40 in.	1	10 in.	+3.00	1.00

(At age 60 to 65 a +3.00 add. will usually not be tolerated. +2.50 is to be preferred)

Should the patient indicate 16 inches as a desired working distance the reasoning is no different.

An emmetrope to read at 16 inches will use 2½ diopters. To do this with comfort he should have one diopter in reserve at all times. We therefore establish a new punctum proximum. 2½ D + 1.00D = 3½ D. 3½ diopters divided into 40 inches gives us 11.4 inches.

The tendency of all refractionists is to over correct the presbyope, therefore it is safer to arbitrarily choose 12 inches for the new punctum proximum and add just enough plus, but no more, on each eye to lift the blur at that distance. The 5 point type will then be clear at 16 inches, and the patient will read the line marked 20/25 on the Lebensohn chart.

Presbyopic chart for 16 inches showing Amplitude, "add" and reserve.

Age	p.p.	Amp.	New p.p.	Add.	Reserve
45	13	3	12 in.	+ .50	1.00
50	16	2½	12 in.	+1.00	1.00
55	23	1¾	12 in.	+1.75	1.00
60	40	1	12 in.	+2.50	1.00

(At age 60 an add. of +2.00 to +2.25 will usually be more acceptable than a +2.50 add.)

The musician past fifty does very well with a +.75 add in fit overs which gives him a punctum proximum at about 13 inches and a punctum remotum at 53 inches. A range between 12 inches and 53 inches or 41 inches and an amplitude of 2.50 diopters. The musician at 60 would have, with the +.75 add, a punctum

remotum at 53 inches, a punctum proximum at 23 inches, an amplitude of one diopter, and a range of 30 inches. It is noted there is a wide difference between range and amplitude.

About thirty-seven years ago the writer began experimenting with a Prince rule and similar appliances and in this time a number of persons, children, teen age, and young adults were found who were in a presbyopic state.

The last one I saw of any consequence was a ten year old boy in the fall of '39. His vision was 20/40 + in each eye. Complaint, school work difficult. Dynamic skiametry gave +2.50 for each eye. Subjective manifest +2.00 for each eye giving 20/20 for each eye. The classic atropine prescription was given and in three days he was refracted again. The finding was again +2.00 and vision 20/20 for each eye. Here the cycloplegic finding proved the correctness of the manifest. No deductions were indicated. Neither was a post cycloplegic indicated, however, one important measurement was overlooked.

In the fall of 1940 the father brought the boy back stating the print in school was much smaller and the boy was again having trouble.

The record showed that the most essential measurement in any refraction had not been made. The punctum proximum was not recorded. The child had a punctum proximum way back at 20 inches. He was handled like any presbyope. The Ampliometer slide set at 10 inches, the blur lifted with a +2.00 clearing the type at 13 inches and giving 20/20 (Lebensohn chart) at that distance.

Bifocals were prescribed. A subsequent recheck proved their efficiency.

Owning a tape measure and knowing Donders' table will explain many obscure cases with children and young adults. Much easier, however, is the use of Prince rule or the Ampliometer.

DISCUSSION

Dr. A. H. Pember, Janesville, Wisconsin: It is indeed an honor to appear before the Section of Ophthalmology of the Illinois State Medical Society, and the same section of the Wisconsin Medical Society sends greetings.

Dr. Woods has worked out something of great value, as those of the profession who have used his technic will testify. Where his technic has been followed, especially in discomfort and presbyopic cases, the end results have been most gratifying.

The subject of the paper behooves the first discussant to confine what is to be said to presbyopia. However, I shall digress at times. Those of you who are not presbyopes will soon experience the difficulties of an added power for near to your distance correction. Presbyopia may be divided into two large general classes. The first includes those patients under the age of 45 who, when their refraction is completed, do not have their punctum proximum situated by actual measurement where it should be. The second group is made up of those individuals of the recognized presbyopic age whose punctum proximum has receded physiologically. The cases falling in Class 1 do so for one of two reasons; either we have not put enough plus in their finding or the case is one of early presbyopia. The clinical findings are the same in either classification 1 or 2, as is the treatment.

Not only the ametropic youngster, strabismic or not, but also the middle-aged adult in ordinary ophthalmic practice, should be the recipient of a refraction which has the accommodation suspended; in presbyopia by lenses and in younger individuals by drops or by lenses alone after a certain age. Why not, then, offer the individual who has reached the presbyopic age the same relative refraction?

By this is meant a dynamic skiapsy followed by a manifest refraction. In any concept of refraction this latter procedure is comparable to a post-cycloplegic refraction of a non-presbyope.

There are a few points not stressed by Dr. Woods. As an interne, with chiefs such as Suker, Lane, Darling and Gradle, the surgical rather than the refractive division of ophthalmology was stressed. As a result, all concerned were too preoccupied and paid too little attention to optics and physiologic optics with resultant comfort of cases presenting themselves for refraction alone. A good static or dynamic retinoscopy was done even in those days and the patient's eyes were treated more or less as a fixed optical instrument and the presbyopic correction added. The patient alone had to compensate for any optical discomfort. The job was done so far as the refractionist was concerned and it was up to the patient to wear the glasses ordered. May it be suggested again that an accurate manifest refraction be done after a meticulous dynamic skiametry in all presbyopes. From the findings and deductions of dynamic skiametry — and there are deductions of the above double maneuver, we arrive at the comfortable distance correction because the manifest will correspond with our findings as it does in a post-cycloplegic of a non-presbyope.

Most of us were taught that a specific addition should be added after the proper distance correction is ascertained: a +1.00 age 45; a +2.00 at 50; and even a +3.00 at 60 years of age. But why at the age of 45 do we add the +1.00? Simply because if our distance correction is correct, and the patient states 13 inches as his working distance, we know this

individual to read at 13 inches must use 3 diopters of accommodation; at 16 inches, 2.50 diopters of accommodation; at 23 inches, 1.75 diopters of accommodation, etc. At age 45 he has 3 diopters in reserve but cannot continue to exert this much muscle pull for any great length of time without tiring. If we create a new punctum proximum at 10 inches by adding a +1.00 sphere, then the patient can see comfortably for a short period of time, and when print is pushed back to 13 inches steady near work is made more comfortable. He uses the one diopter we have supplied, plus one of his own, and still has one in reserve. Very seldom is it necessary, as stated by Dr. Woods, to add a +3.00 if the distance correction is correct. The exception is a monocular aphakic eye.

The distance correction may introduce undesirable lens factors causing discomfort at near in any bifocal correction and Dr. Woods was correct in stating that the patient's distance lenses should be centered for the pupillary distance taken at 13 inches, and the bifocal segment moved in 2 mm in each eye. By so doing the effect of prism base in is secured to neutralize prism base out introduced by the distance prescription. The resultant amount of prism base in required varies with the strength of the patient's reserve convergence.

Dr. Woods mentioned the importance of taking proper interpupillary measurements. The usual manner in which the pupillary distance has been taken in the past has been from the inner limbus of one eye to the outer limbus of the other eye. Most clinicians have taken the pupillary distance at either 20 feet or a given near point. Dr. Woods suggests 13 inches for all near workers and presbyopes.

Another accurate method for this measurement, known as the corneal reflex pupillary distance, physiologic or visual axis pupillary distance, has been mentioned in years past by some authors, but for some reason has not been accepted as a general practice. It is the method suggested by Dr. George Guibor and by Austin Belgard, and arrives eventually at the same result as the pupillary distance taken by Dr. Woods. It has been found in many thousands of cases that the corneal reflex finding is usually 1 to 1.5 mm nasal in each eye to the geometric center of the cornea. This method, for the near pupillary distance, eliminates the prism effect base out produced by plus lenses when seeing at near through the distance glasses. Likewise, using the corneal reflex pupillary distance at near in a pair or reading glasses, the prism base out is eliminated. So this should become the method of choice in all prescriptions containing plus lenses. When the adduction power is weak in the near worker or presbyope the near pupillary distance should be used for the distance pupillary distance in order to secure prism base in to support convergence. This prism base in at distance leaves little or no base out at near as the patient looks through the optical center of his lens, except in those cases where a cylinder of sufficient strength at a given axis creates base out. Then the lens should have a still narrower pupillary distance than the near pupillary distance, so as to offset the prism created by the odd axis cylinder.

In minus lenses the same procedure is followed except that the lenses are decentered out. Using the corneal reflex for distance, prism base in is created when the patient converges for near. If a slight amount of prism is desired for distance then the anatomic pupillary distance may be used. If a greater amount of prism is desired then the lens must naturally be decentered out.

As we know, every stimulus to accommodate is also one to converge, and it is necessary to not only measure the accommodation for a given age but also the convergence and reserve convergence. It follows that the punctum proximum of convergence and accommodation should be equal. To measure the punctum proximum of convergence the patient should maintain a single vertical line and dot at the artificial punctum proximum distance which he should have for his age, and if the vertical line and dot double the amount of prism base in needed to maintain a dot and single line is the amount needed for synkineses. In this maneuver reserve convergence is called into play. This is measured by a vertical line and dot set at 13 inches (distance correction and presbyopic correction on) and a 6 degree prism base up or down before each eye. The patient should be able to overcome 15 degrees base out with means of a prism bar or rotary prism. Ordinarily, if he can accomplish this, he will have no discomfort as there will be no convergence difficulty. He will wear his bifocals comfortably.

I think it was Dr. Fisher many years ago who said: "Do accurate manifest; use the drops and prescribe the manifest." The equivalent applies in presbyopia; do an accurate dynamic skiopsy and then a manifest, leaving vision *just as good* with the strongest plus or the weakest minus lens as the case may be. Also, in presbyopia, the add must not only be figured in centimeters or inches according to the patient's desired reading distance, but also so as to leave one diopter of reserve accommodation. The old dictum, the younger the ophthalmologist, the stronger the add prescribed, no doubt still holds true.

TEN HEALTH RULES

Eat less, chew more.
Ride less, walk more.
Clothe less, bathe more.
Worry less, work more.
Idle less, play more.
Talk less, think more.
Go less, sleep more.
Waste less, give more.
Scold less, laugh more.
Preach less, practice more.

—*Anon*

DIABETIC COMA WITH ANURIA RELIEVED BY LARGE AMOUNTS OF INSULIN AND FLUID

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Diabetic coma continues to be a major medical emergency; when complicated by anuria it presents a serious problem. The case reported below was in profound coma, passed into anuria and uremia, and required unusually large amounts of insulin and fluid to bring about recovery.

The unusual characteristics in the case to be described warrant publication of an individual report. Joslin[1] has stated, "The efficiency of the kidneys of patients with diabetes has always been striking, and the onset of renal disease in cases of diabetes of long duration has been far less frequent than one would anticipate on the other hand, in beginning coma, renal involvement has always seemed marked." Davidson and his coworkers[2] have commented that recovery from diabetic coma is rare when anuria supervenes.

REPORT OF A CASE

A young woman, aged 22 years, entered St. Anthony's Hospital October 27th, 1940, in deep coma. For three years she had been aware that she had diabetes and was well controlled with one daily dose of 20 units of protamine zinc insulin. Four days preceding her admittance to the hospital she had an impacted molar tooth removed under procaine anesthesia. She could not eat and omitted her insulin the following three days. Two days previous to her admission, she became nauseated and vomited occasionally and the day preceding admission she vomited continuously. On visiting the patient in her home, I found she did not respond to questions and upon her arrival at the hospital was in deep coma. On admission at 12:15 P.M. she had typical Kussmaul respirations and an acetone odor to the breath. She was restless, at times maniacal, and could not be aroused. The eye balls were soft; mouth, tongue and mucus membranes were parched. The skin was dry and showed evidence of lowered body temperature. Catheterization produced a total of 560 cubic centimeters of urine containing 5 per cent sugar, 2 plus albumen, 2 plus acetone, 2 plus diacetic acid, and with a specific gravity of 1.012. Microscopic examination revealed 4 plus hyaline casts and occasional leucocytes. The blood sugar was 544 mg. per hundred cubic centimeters. Due to inadequate apparatus, unfortunately, a carbon dioxide-combining power of the blood plasma could not be carried out. The blood pressure on admission was 105 systolic and 60 diastolic. The patient was immediately given 40 units of unmodified or crystalline insulin, warm blankets and heat were applied externally and preparations for gastric lavage were carried out. On lavage of the stomach from 1000-1500 cubic centimeters of black, tarry fluid returned, and 200 cubic centimeters of 5 per cent saline solution was allowed to remain after the washings were clear. A cleansing soap suds enema was given.

Insulin in doses of 30 units was given every fifteen minutes for the first four hours. The next blood sugar was taken six hours after the first estimation and was 428 mg. per hundred cubic centimeters. At 3:45 P.M., a quantitative urinary sugar was 4.5 per cent and the same reading was reported at 7:00 P.M.; additional readings at 10:00 P.M. and 1:00 A.M. were both 6.5 per cent. This was taken to indicate failure of response and larger doses of insulin were employed; 150 units were given intravenously at this time. In spite of persistent efforts to increase the carbohydrate metabolism and the use of large amounts of fluid intravenously and subcutaneously, the urinary output steadily diminished. The next morning, October 28th, 25 cubic centimeters of urine were obtained by catheter; during the afternoon the patient was restless, generalized muscle twitching was prominent, the skin was cold and at one time the pulse was imperceptible for over ten minutes. The blood pressure reading had fallen from 105 systolic to 88. By 6:00 P.M. on the same day only 100 cubic centimeters of urine could be obtained by catheter. During the next fourteen hours the entire output was only 100 cubic centimeters. An additional six hours elapsed before the patient voided 50 cubic centimeters. Because of the presence of anuria, additional fluids were continued. This included 1400 cubic centimeters of 10 per cent dextrose solution in divided doses administered over the twenty-four hour period, 3000 cubic centimeters of physiologic normal saline intravenously and subcutaneously, 1000 cubic centimeters of 2½ per cent dextrose in saline subcutaneously, 1000 cubic centimeters sixth molar sodium lactate solution, and 200 cubic centimeters of 5 per cent saline introduced through stomach tube. A total of 6,600 cubic centimeters of fluid was thus given in the twenty-four hour period and while the patient was in coma. The total amount of insulin required for twenty-four hours, while the patient was in coma, was 1255 units. The patient showed swelling of the face on the third day and marked subcutaneous edema of the entire abdomen on the seventh day. The subcutaneous abdominal edema was considerable and obscured the depression at the umbilicus. At no time was there edema of the extremities.

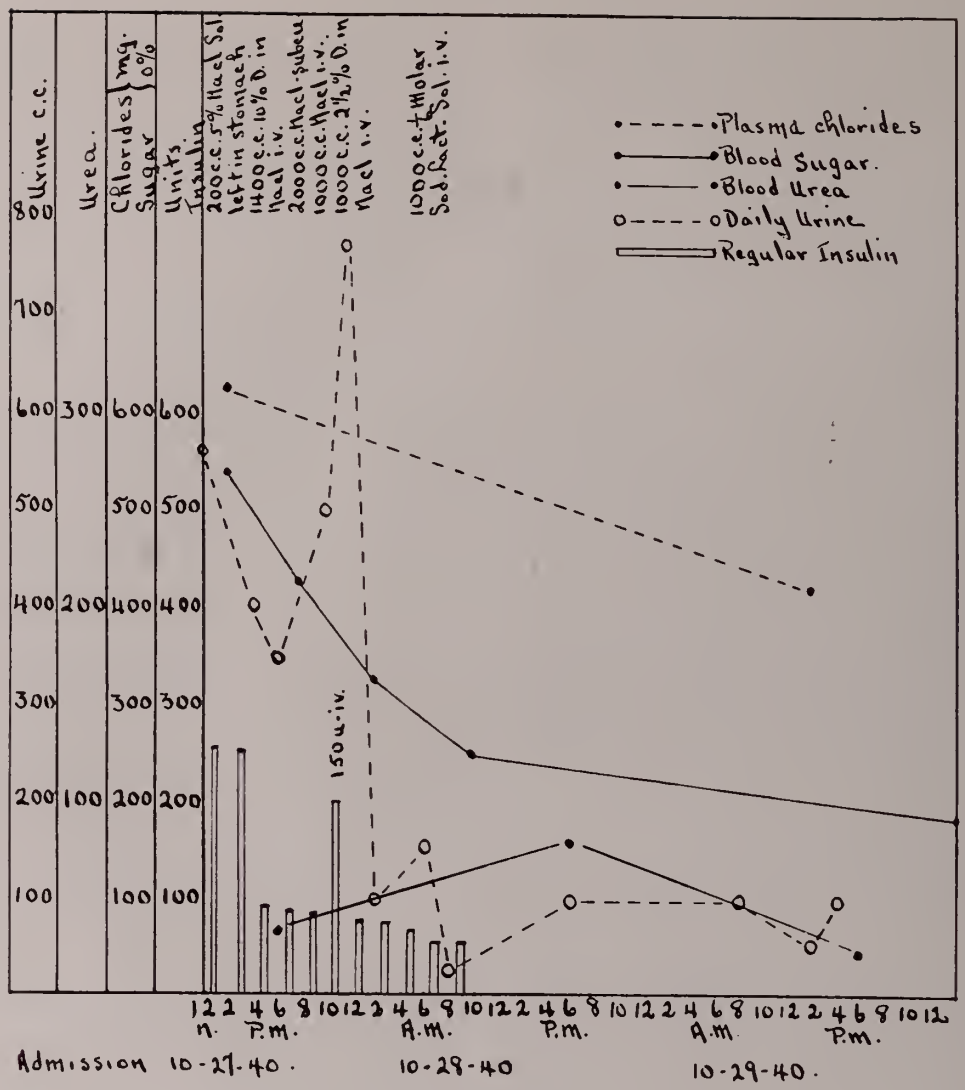


Chart shows the level of blood sugar, plasma chlorides, blood urea, urinary output, amount of fluids, amount of Insulin while patient was in coma. (Slightly reconstructed after Fullerton, Lyall and Davidson.)

Plasma chloride determination on admission was 618 mg. per cent and fell to 415 mg. per cent on October 29th. Blood urea determination six hours after admission was 32 mg. per cent and rose to 78 mg. per cent on the second day and fell to 22 mg. on the third day. The blood sugar declined after the third day to 185 mg. per cent. The accompanying chart summarizes the plasma chloride, urea and blood sugar estimations; it also indicates the output of urine and total insulin and fluid in twenty-four hour period of coma.

The abdominal and facial edema disappeared on November 4th, eight days after admission, on changing to a salt free diet and substituting potassium chloride. The patient was dismissed from the hospital twelve days after her admission. Two weeks later her weight was 97 lbs. (44 Kg.) compared with her former weight of 106 lbs. (48 Kg.)

An x-ray of her chest at this time revealed no evidence of tuberculosis. The patient's father and mother both died of tuberculosis, aged 37 and 32, respectively.

COMMENT

The complication of anuria and anhydremia in diabetic coma has been stressed by many writers. Peters and his coworkers[3, 4, 5] have studied the serum proteins in diabetic acidosis, and as quoted by Ralli and Waterhouse[16] conclude that their initial high level is due to blood concentration. Mariott[17] has pointed out that after a period of dehydration the administration of water

causes an immediate dilution of the blood and an abrupt fall in the concentration of hemoglobin; when anhydremia is present the secretion of urine is greatly decreased and the colloidal osmotic pressure, according to Starling,[6] approaches the arterial pressure in the renal arterioles.

Anuria is a most serious problem as a complication of diabetic coma and occurs at varying intervals after the onset of extreme acidosis. In the pre-coma interval excessive thirst, polyuria and vomiting place an unusually heavy burden upon the renal capillary endothelium. Nitrogen retention may be of sufficient degree to cause a severe degree of renal insufficiency and, together with oliguria and albuminuria, the presence of hyaline and granular casts occurs frequently. Bulger and Peters[3] have shown that dehydration and not the increase of blood urea may be operating as a cause of failure of renal function, and that increased endogenous nitrogen metabolism of salt as the result of dehydration caused the fixation of sodium and chloride in the tissues as manifested by the marked edema. The amount of fluid given was adequate but not unusual. This explanation may, as Blum, Graber and Van Caulaert[8] have suggested, account for the azotemia in diabetic coma, and be the result of loss of salt into the tissues. The substitution of the potassium ion for sodium seemed to clear the edema rapidly. Atchley and Peters,[9] as quoted by Lande,[10] have stated that "with the breakdown of carbohydrate metabolism there is an increased excretion of electrolytes normally present in the intra and extra-cellular fluids, particularly sodium and potassium. As a result of the rapid loss of water, sodium, and potassium there develops a depletion of base in the body sufficient to cause dehydration of tissues." While the findings in this case were of normal or slightly elevated plasma chlorides, this has not been a constant finding and, as Fullerton,[2] and Lyall and Anderson[11] have shown, may be a part of the general dehydration. The evidence of anuria and uremia here is probably a transitory finding, the result of unusual amounts of ketone bodies, acetone, and diacetic acid that act as a renal irritant and produce the picture of "renal block." As Coburn[12] has emphasized, the greatest factor in overcoming the acute renal insufficiency is the forcing of large amounts of intravenous fluids to wash out the ketone bodies and thereby overcome the circulatory-renal collapse. Root[13] has stated that if large amounts of fluid parenterally fail to bring about urinary secretion, the physician may consider that nothing more can be done. An analysis of plasma chlorides showing a low level may be an indication for giving hypertonic saline in overcoming the anuria. This young patient's survival was in no small measure due to heroic doses of insulin and to persistent efforts in forcing fluids to overcome the anuria.

It is entirely possible that unusually large amounts of fluid and insulin will be found necessary in the future in overcoming extreme dehydration and anuria. In combating the anuria it is also necessary to increase carbohydrate metabolism, and while no definite rule can be given as to the amount of insulin necessary the tendency at this time is to give large amounts until the patient is well out of coma and the acidosis is controlled. This procedure is carried out with considerable less timidity than that characterized by the relatively small doses of insulin that were given from 1923 until 1936. In the former period, Baker[18] states that an average dose was only 67 units in the first twenty-four hours, and during the latter period 148 units. The amount of insulin necessary may depend on two factors, the presence or absence of infection and the degree of acidosis as revealed by the depth of unconsciousness and the chemical findings. According to Joslin et al,[1] in 436 cases of coma, 28 were given 500 units of insulin or more during the first twenty-four hours after admission. Root and Riseman[14] have reported 1280 and 850 units, respectively, during the first twenty-four hours. Weiner[15] has reported a case of a man, aged 58 years with extreme insensitiveness to insulin, who in one twenty-four hour period was given 3250 units of unmodified insulin to bring about recovery from acidosis. In children as little as 28 units may be all that is required to relieve diabetic coma. Hypoglycemia, of course, should be avoided.

As this young woman presented no evidence of infection the duration of coma probably accounted for the unusual amount of insulin necessary to bring about recovery. This was probably not due to insulin resistance but to neglect of diabetic management. The large amount of

insulin required may have been due, in some measure, to the use of dextrose solution at the onset of coma. Root and Riseman[14] have emphasized that use of dextrose during severe and profound coma may act as a poison and increase in severity the seriousness of this emergency as well as contribute toward anuria. However, large doses of insulin were necessary because of the extreme degree of acidosis, the marked dehydration and the concomitant anuria.

CONCLUSION

1. While no definite rules for determining the correct amount of insulin can be made, neverthless large doses may have to be given to correct the disturbed carbohydrate metabolism.

2. Factors to be considered in treating diabetic coma are: (1) the duration of coma, (2) the presence of infection and (3) the age of the patient.

3. In the case reported, unusually large amounts of fluid and insulin were necessary to overcome a severe degree of coma with anuria.

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REPORT OF THE COOPERATIVE PROGRAM FOR THE CONTROL OF SYPHILIS BY THE GENERAL PRACTITIONER AND THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH*

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A successful program for the control of syphilis must make ample provision to diagnose as early as possible every case of syphilis; to institute competent medical care as soon as the diagnosis has been definitely established; to keep infectious cases under medical care until they become non-infectious and to prevent new infections by medical, educational and legal measures. The same well known public health principles towards the detection and prevention of the spread of a communicable disease must be employed in the suppression of every case of early syphilis. This will depend entirely upon the tracing of every infection to its original source and the investigation of every person whom the patient may have exposed.

The control of syphilis must include those cases under the care of private physicians as well as those treated in clinics and institutions. Since the only available statistics in the management of luetic cases have been those treated in clinics, it would seem that the control of privately treated cases has been sadly neglected.

We fully realize that no venereal disease control program can succeed without the cooperation of the private physicians. Although much progress has been made, our goal is far from being reached. We have just begun to concentrate upon our methods of handling these cases and judging from the preliminary results we have

*From the Illinois Department of Public Health, Dr. R. R. Cross, Director.

obtained, we have every indication to believe that a great deal more progress will continue to be made in the future.

Any new procedure in the control of a public health problem will naturally be met by opposition of the medical profession, as well as the laity. It stands to reason that greater amount of opposition will have to be overcome when any new method to control privately treated patients is inaugurated, especially since "finding and treating syphilis strikes at the intimate life of individuals." The greatest problem was to overcome the reluctance of private physicians to allow health officers or investigators to contact the patients regardless of social or economical standing. This resistance was gradually overcome by the tactful and diplomatic manner of handling both the physician and the patient and thereby never losing sight of and respect for the physician-patient relationship.

The medical profession gradually became to realize that all of our efforts were directed to bring its members the necessary facilities to make an early diagnosis of syphilis through our free laboratory service. Free drugs, follow-up and consultation services were also made available to private physicians.

Educational programs were carried on by means of literature, pamphlets, lectures, radio and moving pictures. A year's subscription to the U. S. Public Health Service's bulletin VENEREAL DISEASE INFORMATION was given free of charge to each of the 2,030 physicians reporting venereal disease in 1939.

Additional services rendered to private physicians by the State Department of Public Health include pre-scheduled treatment outlines based upon the principles of treatment recommended by the Cooperative Clinical Group. Refresher or post graduate courses are given regularly at the Chicago Municipal Social Hygiene Clinic. Discussion of personal cases is encouraged and daily inquiries pertaining to some phase of the management of luetic cases is received by this Department.

The response of the private physicians to our cooperation with them to control luetic patients has been so appreciative, that without solicitation they began to report cases by name instead of key or code number and at the present time nearly 85% of all cases of venereal disease are reported by the name.

Educational measures for public information are being employed by cooperating with the churches, clubs, schools, societies and other organizations by furnishing them with literature, pamphlets, moving pictures and speakers on syphilis and gonorrhea. During the past year (1939) we have been receiving an increasing number of requests for speakers on the premarital health laws. We had 126 showings of the movies with an attendance of 13,578. These pictures presented various phases of the control and management of syphilis. There were 285,345 pamphlets on venereal disease and other subjects of a social hygiene nature mailed from this office. The wax moulages on syphilis were exhibited in seventeen C.C.C. camps and nineteen cities where there were venereal disease exhibits. The dissemination of venereal disease literature and information has been very enthusiastically received by the public.

General blood testing programs have been carried out at the request of school and county fair boards, local authorities as well as the Lions, Kiwanis and Rotary Clubs. Industrial surveys for blood tests have been carried on in conjunction with the Division of Industrial Hygiene and in cooperation of the U. S. Public Health Service at the request of various industries. The outcome of the serological examination was considered confidential and those cases with a positive serology were referred to their private physician for treatment. No person was discharged unless he was found to be an industrial hazard, either to himself or fellow worker.

CLEARANCE OF CASE RECORDS — There were 5,459 case records removed from our active files during the past year. These cases were cleared on the information submitted to this office by private physicians advising us of the following dispositions of the cases under their care for syphilis:

Completed Treatment	2877	52.71%
Unable to locate	814	14.91
Refuses treatment	363	6.63
Transferred to State Clinics	297	5.42
Transferred to State Institutions	199	3.62

Moved out of State	242	4.42
Moved to Chicago	94	1.73
Duplicate case reports	168	3.21
Patients over 60 with previous treatment	133	2.42
False positive serology	23	.41
Physicians not using State drugs	39	.71
No funds for treatment	35	.60
Died	175	3.21
Total	5.459	100.00

PRIVATELY TREATED CASES — The most striking accomplishment of our entire control program of venereal disease is the fact that for the first time since the establishment of a Social Hygiene Division of the State Department of Health of Illinois, we are able to submit a detailed report of 2,877* cases of syphilis which had been discharged by private physicians who had reported them as having completed their treatment. These are the first detailed figures ever to be presented by this or any other state in which such a large number of private cases had been treated and discharged by individual physicians. The 2,877 cases of syphilis were under the care of 1,209 private physicians.

Physicians discharged these cases as having (1) completed their treatment; (2) received sufficient treatment to be non-infectious; (3) received a minimum amount of treatment to become non-infectious; or (4) "cured."

There were 1,598 cases of primary, secondary and early latent syphilis and of these 1,355 or 84.8% received at least a minimum of treatment, consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent during the first year of treatment.

TABLE I

DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES BY RACE AND SEX

	White Male	White Female	Colored Male	Colored Female	TOTAL	Percent
Primary	279	103	11	8	401	13.94
Secondary	290	293	21	28	632	21.97
Latent	244	256	26	39	565	19.64
Late	578	427	43	76	1124	39.06
Central Nervous System	45	29	4	—	78	2.71
Congenital	34	37	2	4	77	2.68
TOTAL	1470	1145	107	155	2877	
Percent	51.1	39.8	3.7	6.4		

*This is a corrected report submitted some time ago (Annual Report 1939) in which each attending physician was contacted and a corrected resume of treatment obtained.

TABLE II

DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES BY AGE AND STAGE OF DISEASE

	Less than 10	10 — 20	21 — 30	31 — 45	46 — 60	61 — 75	More than 75	Total
Primary	—	81	184	111	20	5	—	401
Secondary	—	79	283	209	54	4	3	632
Latent	—	68	273	183	36	5	—	565
Late	—	—	196	506	343	72	7	1124
C.H.S.	—	2	6	33	36	1	—	78
Congenital	38	30	3	1	—	—	—	77
TOTAL	38	260	950	1043	489	87	10	2877
Percent	1.3	9.1	33.	36.2	17.	3.	.4	

The greatest percentage of patients (46.3 percent) having early syphilis fell in the 20-30 age group.

TABLE III

DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO THE AMOUNT OF TREATMENT EACH PATIENT RECEIVED BY STAGE OF DISEASE

PRIMARY SYPHILIS

INTRAMUSCULAR INJECTIONS OF HEAVY METALS

Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	4	17	3	2	1	—	—	—	27
20-29	5	31	57	35	22	6	3	5	164
30-39	3	6	29	42	18	14	9	—	121
40-49	—	3	1	7	21	13	12	2	59
50-59	—	—	3	3	3	7	5	4	25
60-75	—	—	—	1	—	—	4	—	5
Total	12	57	93	90	65	40	33	11	401

338 or 84.28% of all cases of primary syphilis received a minimum amount of treatment consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent. 355 (88.5%) cases received continuous treatment and 46 cases had at least one interruption of treatment.

TABLE IV

DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO THE AMOUNT OF TREATMENT EACH PATIENT RECEIVED BY STAGE OF DISEASE

SECONDARY SYPHILIS

INTRAMUSCULAR INJECTIONS OF HEAVY METALS

Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	8	18	8	4	2	1	—	—	41
20-29	6	40	97	48	35	15	6	2	249
30-39	—	9	35	65	43	20	17	2	191
40-49	—	1	9	18	28	16	16	5	93
50-59	—	—	1	4	8	15	11	4	43
60-75	—	—	—	1	2	2	8	2	15
Total	14	68	150	140	118	69	58	15	632

545 cases or 86.3% of all cases of secondary syphilis received a minimum amount of treatment consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent. 560 (89.6%) cases received continuous treatment and 72 cases had at least one interruption of treatment.

TABLE V
DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO THE AMOUNT OF TREATMENT EACH PATIENT RECEIVED BY STAGE OF DISEASE

LATENT SYPHILIS

INTRAMUSCULAR INJECTIONS OF HEAVY METALS									
Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	2	17	9	6	1	2	—	1	38
20-29	6	49	80	69	24	8	4	—	240
30-39	1	16	34	59	33	10	11	3	167
40-49	—	2	9	14	20	16	14	1	76
50-59	—	—	—	—	7	8	9	5	29
60-75	—	—	—	1	1	4	4	3	13
More than 75	—	—	—	1	—	1	—	—	2
Total	9	84	132	150	86	49	42	13	565

472 or 83.5% of all cases of early latent syphilis received a minimum amount of treatment consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent. 390 (69%) cases received continuous and 175 cases had at least one interruption of treatment.

TABLE VI
DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO AMOUNT OF TREATMENT EACH PATIENT RECEIVED BY STAGE OF DISEASE

LATE SYPHILIS

INTRAMUSCULAR INJECTIONS OF HEAVY METALS									
Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	7	71	49	28	13	4	7	—	179
20-29	10	80	153	108	58	28	16	8	461
30-39	5	10	36	89	59	25	29	9	262
40-49	4	6	8	21	42	23	24	6	134
50-59	—	3	3	4	5	16	14	4	49
60-75	—	1	3	5	6	4	13	1	33
More than 75	—	—	—	—	1	—	1	4	6
Total	26	171	252	255	184	100	104	32	1124

850 or 76% of all cases of late syphilis received a minimum amount of treatment consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent. 517 (46%) cases received continuous treatment and 607 had at least one interruption of treatment.

TABLE VII
DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO THE AMOUNT OF TREATMENT EACH PATIENT RECEIVED BY STAGE OF DISEASE

CONGENITAL SYPHILIS

INTRAMUSCULAR INJECTIONS OF HEAVY METALS									
Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	2	4	2	1	—	—	—	—	9
20-29	1	3	4	7	4	3	1	1	24
30-39	1	2	5	4	6	5	—	2	25
40-49	—	—	1	1	4	2	1	—	9
50-59	1	—	3	1	1	—	—	—	6
60-75	—	—	1	—	2	—	—	—	3
More than 75	—	—	—	1	—	—	—	—	1
Total	5	9	16	15	17	10	2	3	77

51 or 65% of all cases of congenital syphilis received a minimum amount of treatment consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent. 56 (73%) cases received continuous treatment and 21 cases had at least one interruption of treatment.

TABLE VIII
DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO THE AMOUNT OF TREATMENT EACH PATIENT RECEIVED BY STAGE OF DISEASE

CENTRAL NERVOUS SYSTEM SYPHILIS

INTRAMUSCULAR INJECTIONS OF HEAVY METALS									
Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	—	—	—	—	—	—	—	—	—
20-29	2	11	13	11	7	2	2	2	50
30-39	—	—	1	2	6	—	2	1	12
40-49	1	—	—	2	1	1	1	2	8
50-59	—	1	—	—	2	1	—	—	4
60-75	—	—	—	—	—	—	1	1	2
More than 75	1	—	—	—	—	—	—	1	2
Total	4	12	14	15	16	4	6	7	78

65 or 83% of all cases of cerebral spinal syphilis received a minimum amount of treatement consisting of 20 arsenical injections and 20 of a heavy metal or its equivalent. 52 (66%) cases received continuous treatment and 26 cases had at least one interruption of treatment.

TABLE IX

DIAGNOSTIC ANALYSES OF PRIVATELY TREATED CASES AS TO THE AMOUNT OF TREATMENT EACH PATIENT RECEIVED — — — — ALL STAGES OF DISEASE

	INTRAMUSCULAR INJECTIONS OF HEAVY METALS								
Intravenous Injections of Arsenicals	Less than 10	10-19	20-29	30-39	40-49	50-59	60-75	More than 75	Total
10-19	23	127	71	41	17	7	7	1	294
20-29	30	214	404	278	150	62	32	18	1188
30-39	10	43	140	261	165	74	68	17	778
40-49	5	12	28	63	116	71	68	16	379
50-59	1	4	10	12	26	47	39	17	156
60-75	—	1	4	8	11	10	30	7	71
Over 75	1	—	—	2	1	1	1	5	11
Total	70	401	657	665	486	272	245	81	2877

EPIDEMIOLOGY — AS STATED BEFORE THE SUCCESS FOR THE CONTROL OF SYPHILIS DEPENDS ENTIRELY UPON THE CAREFUL TRACING OF EVERY EARLY INFECTION TO ITS ORIGINAL SOURCE AND THE INVESTIGATION OF EVERY PERSON WHOM THE PATIENT MIGHT HAVE EXPOSED. The manner and method of approach to these investigations of the public health officer, nurse or field representative will determine the success or failure of the epidemiological results of venereal diseases. The health officer, nurse, social worker or anyone else associated with the health department who considers it below his or her dignity to contact these sources of infection and to investigate the subsequent exposures must be considered as detrimental to the control of venereal disease programs and their services should be directed to other public health measures and not to venereal disease work.

It is obvious that an infectious disease which is transmitted almost entirely by one method — intimate contact — should be less difficult to follow than one transmitted by insect vectors. This is a problem to be solved by INDIVIDUAL INITIATIVE and is not solved by application of mass methods. "But State action alone — no matter how abundant or necessary — cannot wipe out syphilis. This is not a problem of catching rats or testing water. This is a human problem. Finding and treating syphilis strikes at the intimate life of the individual. The patient immediately raises natural and artificial barriers — the physician alone is capable of breaking through them."

During the past year there were 3,423 venereal disease investigations made for early syphilis — primary, secondary, and latent of less than four years, syphilis in pregnant women and in cases of acute gonorrhea. These investigations included suspected sources of infection (878) in which the actual name and address was given by the physicians in reporting the case; suspected sources of infection (1608) in which the name and address was not given (case finding): and follow-up of discontinued treatment cases (937) in which the physician reported early cases of syphilis have failed to return to continue treatment (case holding). Attention is directed to several very interesting facts which resulted from our epidemiological investigations:

1. We were able to diagnose and place under treatment for syphilis 331 (37.7%) suspected sources of venereal disease infection, and to examine and find negative, 189 (21.5%) as the result of 878 investigations of cases in which the reporting physician gave the name and address of the suspected source. A total of 520 cases (39.2%) named as suspected sources were examined.

ANALYSES OF SUSPECTED SOURCES OF INFECTION
(names given)

Sources placed under treatment	331	37.7%
Sources examined and found negative	189	21.5
Sources outside of State	23	2.7
Sources unable to locate	138	15.7
Investigation not complete	98	11.2
No report of investigation	99	11.2

These cases were personally contacted by our investigator with the permission of the attending physician and by very diplomatic interviews, we were able to examine all suspected sources and place those found positive under treatment.

We were unable to locate 138 (15.7%) suspected sources because on investigation they were found to be either transients or prostitutes with fictitious names and wrong addresses.

The information regarding 23 sources (2.7%) living in other states were sent to the medical directors of the health departments of the respective states for investigation. We have established reciprocal relationship with other states and they have cooperated with us in every way by advising this department of the results of their investigations in these cases.

The fact that 98 (11.1%) of the investigations by our own investigators were incomplete and that we had received no report of the investigations in 99 (11.1%) of suspected sources makes it clear that these investigations were made in the customary thoroughness of a public health investigation of a communicable disease.

2. We were able to diagnose and place under treatment only 128 (7.9%) of 1,608 investigations made for suspected sources of infection in which the actual name of the suspected source was not obtained from the patient. The largest number of cases in this group were 667 (41.4%) in which the source was "unknown." In this group our investigator contacted the reported cases with the attending physician's permission and found that the sources were not known by name or address and that most of the offenders were "pick-ups." In 2,486 contact investigations in newly reported cases, attending physicians failed to cooperate in only 82 cases. There were only 98 cases in which the patient refused to name the source of infection.

ANALYSES OF SUSPECTED SOURCES OF INFECTION
(names not given)

Physician refuses permission	82	5.1%
Patient refuses to name source	98	6.1
Prostitute (house)	138	8.5
Prostitute (street)	30	1.8
Source unknown	667	41.4
Source examined and was negative	37	2.4
Source out of State	84	5.3
Source placed under treatment	128	7.9
Investigation not complete	23	1.5
No report of investigation	278	17.4
Fictitious name	43	2.6

3. The result of our method of "case holding" or follow-up services for discontinued patients has been most encouraging, for we were able to influence 293 (31.2%) to return to the original physician reporting the case and 259 (27.6%) to return to other physicians or to State clinics to continue their treatment, a total of 552 (58.5%) of the number of cases reported as having discontinued their routine treatments were investigated and persuaded to resume treatment. We earnestly believe that our monthly drug letter, which is reproduced and discussed below, resulted in such cooperation by the physician.

ANALYSES OF DISCONTINUED TREATMENT CASES

Cases returned to reporting physicians	293	31.2%
Cases returned to other physicians or clinics	259	27.6
Cases left the State	46	4.9
Cases unable to locate	154	16.5
Cases cured or negative	35	3.7
Cases died	6	.64
Cases not complete	68	7.2
Cases with no disposition	76	8.2

CASE CONTROL OF CASE HOLDING — Our method of "case control" or "case holding" has been found very successful and consisting of a monthly check-up letter which serves as a monthly requisition for free antisyphilitic drugs. This letter indicates the next five weeks' treatment for the patients listed in our records as being under care for syphilis by each doctor. This requisition is to be returned by the attending physician, who indicates his choice of drugs for any patient. If any patient has interrupted his regular treatment schedule, he is requested to fill in the "Discontinued Treatment Notice." EVERY EFFORT WILL BE MADE TO RETURN DELINQUENT PATIENTS TO THE REPORTING PHYSICIAN FOR FURTHER TREATMENT. By this method we are able to have a report, every thirty days, from every physician receiving free drugs, of every patient under his treatment.

I fully agree with the statement recently made by Surgeon General Parran that "when both the State and the physician share the responsibility, syphilis control becomes a reality."

The 248 colleges and universities having modern tuberculosis programs have abandoned the ancient concept of "consumption" — the advanced, serious, contagious, often hopeless stage of tuberculosis. They know early tuberculosis as a sneaking foe that can be discovered long before it causes actual illness. They know that the tuberculin test and the X-ray locate cases early, whereas to await symptoms and stethoscopic findings is to mark time until late manifestations occur. They know that tuberculosis remains chief cause of death in the college age group. They know that at least one-quarter of American college students are infected, as shown by their positive tuberculin reactions. Charles E. Lyght, M.D., Chairman, Tuberculosis Comm., Amer. Student Health Assn., in a letter to college presidents, 1941.

POLIOMYELITIS IN AN INFANT FOUR MONTHS OF AGE DIAGNOSED IN THE PRE-PARALYTIC STAGE

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The occurrence of poliomyelitis under one year of age is infrequent. This fact has been explained on the grounds of a passive immunity in early life derived from the mother. In 1929 Aycock and Kramer demonstrated that the neutralizing power of the serum from the cord blood of eleven out of twelve infants corresponded to that of their mothers. The duration of the immunity is unknown, but by analogy with diphtheria it is assumed to last about six months.

A survey of the age incidence in various epidemics reveals surprising figures. In the 1910 epidemic in the state of Washington there were eighteen cases under one year of age, three cases under six months of age, and a total number of three hundred thirty-one cases all ages. In a study of the 1916 Philadelphia epidemic with a report of seven hundred seventeen cases there were thirty-seven cases under six months of age. In Ohio in the 1927 epidemic there was a total of one thousand, three hundred and eighty cases all ages, of which thirty-eight were under one year, and sixteen under six months of age. In 1931 in New York City there were two thousand and two cases admitted to the city hospitals, of which ten were under six months of age, three of whom were two months old. In all these reports no mention is made of the extent of paralysis. The youngest case reported, two weeks old, occurred in the New York epidemic of 1907. In 1939 Alsen described a case of poliomyelitis in an infant twenty days old, in which there was extensive paralysis of the lower extremities. Thus it may be seen that the disease does occur in infants more frequently than usually suspected.

It must be conceded that the diagnosis of poliomyelitis in the absence of paralysis is very difficult in infancy. Most of the reports do not specify the extent of paralysis, but do imply that paralysis was present. It is for that reason, in addition to other interesting features, that we report the following case of poliomyelitis in a four month old infant.

From the Sarah Morris Division, Michael Reese Hospital.

CASE HISTORY

E.M., a four month old white female infant, was admitted to the Sarah Morris Hospital on September 14, 1940 with a history of having been well until the morning of admission when it awoke around 1 A.M. and began to cry. The infant was fretful and irritable when handled. The temperature was taken and found to be 101°. Later in the day the temperature rose to 102°. There were no convulsions, vomiting, anorexia or irregularity of bowels. The infant was sent into the hospital because her six year old sister had become ill eight days previously with a fulminating attack of poliomyelitis which involved all the extremities and the muscles of respiration on the third day of illness.

Past history revealed a normal development of a full term infant that was still being exclusively breast-fed.

On admission no abnormal findings were disclosed. The infant appeared to be well developed and nourished for its chronological age. However it was irritable and cried a good deal during the examination. There was no neck rigidity or bulging of the fontanelle. The urine was negative. The leukocyte count was 21,350. In lieu of the absence of findings, it was decided to closely observe the patient. Salicylates were administered.

The following morning (9/15/40) the temperature was still elevated at 102°. The picture had changed very little, except that if anything, the child was more irritable and more restless. There also seemed to be generalized hyperesthesia. Stroking along the spine caused the child to cry vigorously. In crying the infant became rigid and a tremor of the head and of the extremities was noted. Resistance of the spine to anterior flexion was not wholly voluntary. In view of the history of contact, absence of other abnormal physical findings, hyperirritability, and continued elevation of fever, a spinal puncture was done. The pressure was definitely increased, and the fluid had a ground-glass appearance. The Ross-Jones test was positive. There were 276 cells, of which 68 per cent were lymphocytes and 32 percent were polymorphonuclear leukocytes. The total protein was 40 mgm. per cent, the chlorides 723, the sugar 57.5. Direct smear and culture were negative. We felt that we were dealing with a case of pre-paralyic poliomyelitis.

Therapy was immediately instituted. Because of the severe and fulminating character of the disease in the older sibling, and the apparent deficient inherited immunity, unusually massive doses of convalescent poliomyelitis serum were administered intravenously. One hundred twenty c.c. of serum was given in the morning, and repeated in the evening, a total of two hundred forty c.c.

The fever subsided within forty-eight hours after initial serum therapy. On 9/16/40 the infant was still irritable, fever was 102°, but there was no evidence of paralysis. The tremor was less apparent. There was no disturbance in bowels. On 9/17/40 the fever was lower (100°). Irritability was much less marked. The infant ate well, and grasped at objects. On 9/18/40 the temperature was normal all day. All the extremities moved well. The baby's disposition was a happy one. From this time on the course was uneventful.

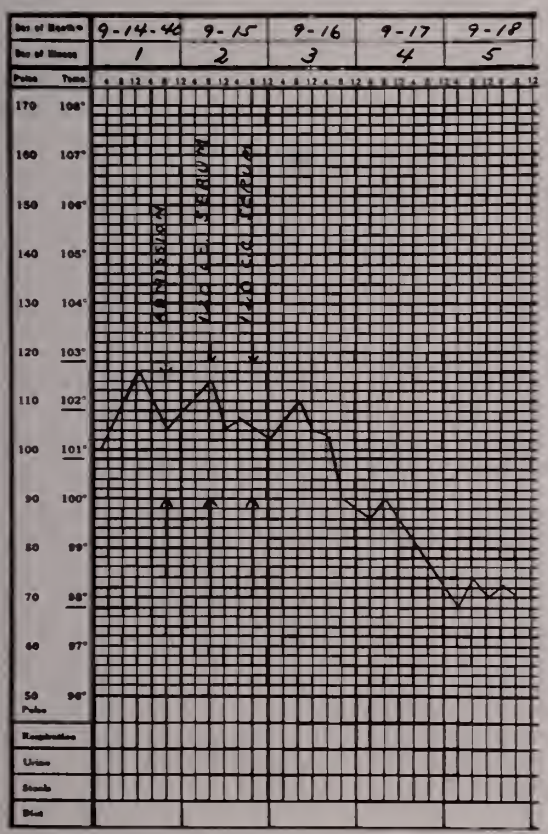


Figure 1 — Temperature curve of four-month old infant with poliomyelitis.

DISCUSSION

There were several interesting features about this case. It is very unlikely that a diagnosis of poliomyelitis would have been made before paralysis set in had not the older sibling had the disease. In view of what happened to the sister, and the apparent lack of immunity in the infant itself, the course would probably have been a severe one.

We know that the incubation period in poliomyelitis averages from seven to fourteen days. The fact that the infant became ill eight days after the sister makes it difficult to state the source of infection for the infant. Whether the infant was exposed to the original source or to the sister remains debatable.

The symptoms that aroused suspicion were mild. The hyperesthesia and hyperirritability were the outstanding features. Characteristic symptomatology of preparalytic poliomyelitis was absent. There were no gastro-intestinal symptoms, bulging of the fontanelle, or neck rigidity. A suggestive finding was stroking along the spine which caused the infant to cry.

Extensive serotherapy was administered early in the disease, and the infant made a prompt recovery without any paralysis.

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PRURITUS IN MEDICINE AND IN DERMATOLOGY

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Itching ranks with pain among the important subjective sensations in medicine, and is of particular importance in the field of dermatology since so many common dermatoses have itching as the important subjective symptom; which varies according to the nature of the cutaneous entity, its site, the cause of the symptoms; and the psychic makeup of the individual. "Itching represents a sensory quality identical with that of protopathic pain[1]." About two hundred years ago Haffenreffer[2] stated that "itching is an unpleasant cutaneous sensation which provokes the desire to scratch." Most of you are well acquainted with the essential points in the differential diagnosis of medical and surgical dis-

Post Convention Clinical Lecture, Michael Reese Hospital, Chicago, May 23, 1941.

eases that present themselves with pain as the cardinal symptom, and are well versed, from common usage, in the proper laboratory and diagnostic aids e.g. X-Ray and fluoroscope, blood and serum studies, and electrocardiograph to "sift out" the essential diagnostic points in order to come to a correct diagnosis and prescribe the proper treatment "to relieve suffering and prolong life."

In Chart I I have enumerated a number of important cutaneous entities which one must consider in the diagnostic approach to a patient presenting generalized pruritus as the important subjective symptom. The entities are arranged in the order that I have found practical for easy consideration in a succinct diagnostic scheme. I shall endeavor to detail as completely as time allows the essential objective signs to consider in distinguishing these entities from each other; together with mention of the proper laboratory aids, and brief remarks on treatment. On the chart you will note that I have placed the entities of exogenous origin first, and then go on to those cutaneous entities of endogenous origin; and then to those that are dependent upon systemic disease for the origin and perpetuation of the itching.

CHART I

PRURITUS GROUP

1—Parasitic Causes:
- Scabies
- Pediculosis
- Fungi:
 - Ringworm
 - Yeasts (Monilia)
 - Trichophytids-Monilids

2—Eczema

3—Urticaria:
- Acute-Chronic (Dermatographism)

4—Papulo-Squamous Group:
- Pityriasis Rosea
- Psoriasis
- Lichen Planus
- Seborrheic Dermatitis

5—Constitutional Causes:
- Diabetes — Nephritis
- Jaundice — Blood Dyscrasias

6—Pruritus Hiemalis — Bath Pruritus

7—Senile Pruritus

8—Dermatitis Herpetiformis (Dühring's Disease)

9—Lymphoblastomas:
- Leukemias and Leukemids
- Pseudoleukemia (Hodgkin's)
- Mycosis Fungoides
- Lymphosarcoma

10—Cutaneous Neuroses:
- Neurotic excoriations
- Dermatitis Artefacta
- (Factitious or Feigned eruption)

The parasitic invasions of the skin exhibit characteristic cutaneous lesions, and may occur in people in all walks of life since the acarus scabiei and pediculi are no respectors of persons. Scabies, which is commonly called "7 years itch" is an eruption of the skin of rather frequent occurrence that is characterized by nocturnal itching; the occurrence of erythematous papules often surmounted by edematous crusts, and the associated presence of burrows that represent the course of the female parasite, with deposition of her eggs in the skin; and these burrows are most commonly seen in the webs of the fingers, about the breasts, in the female, about the umbilicus, and on the corona penis. Careful removal of the top of the vesicle at the end of a burrow will often reveal the acarus when the fragment of skin is examined under the low power of the microscope. In the adult the face and scalp are rarely involved. In babies and young children, the palms and soles may be involved. The diagnosis of scabies is comparatively easy in the presence of the characteristic lesions; just described, with an associated history of contagion and involvement of other members of the family, nocturnal exacerbation of the itching, and its beneficial response to sulphur therapy. In the treatment of a family infected with scabies, it is essential that all members of the family be treated at the same time. Sulphur is the common remedial agent and may be used in various forms, but I prefer the so called twenty-four hour treatment with Danish ointment described by Greenwood.[3a] The Danish ointment is a complex formula that is hard to prepare, and since it can be procured in proprietary form[3b] it can be readily secured for use by all[3b] in any community. After a warm bath, at which time all affected areas are rubbed briskly with a well lathered wash cloth, the body is dried, and then anointed with Danish ointment[3b] from the chin to the ankles, with an extra "rubbing in" over affected areas. The ointment is allowed to remain on the skin for twenty-four hours, then another bath is taken, as before, and if, as occasionally happens, itching is present as the result of sulphur dermatitis

in sensitive individuals, a soothing lotion like calamine liniment (N.F.) is applied. Fresh night clothes are applied, and all beds previously slept in should be stripped of their linen, and the same carefully laundered or cleaned to prevent re-infection from this source.

Pediculosis — Since this parasite lives in the clothing; all clothing must be removed and sterilized by steam or heat in the process of laundering. The patient should take a warm bath during which he has a thorough scrubbing with soap and water, and after carefully drying the skin; following the bath, it is well to rub into the body a 1:1000 Bichloride of Mercury solution. This solution can be continued night and morning for a couple of days to make certain that all parasites are destroyed.

Yeast infections of the skin are common in those areas where the cutaneous surfaces are in apposition such as in the inframammary areas, the creases in the pendulous folds of the abdomen of obese individuals, and in the groin, and occasionally in the axillae. When a person in middle life presents a pruritic markedly inflammatory eruption in the inframammary areas, the possibility of a diabetes in the patient must always be considered, and it is important to rule out glycosuria and hyperglycemia. In the absence of a diabetes, such involved areas respond well to drying lotions like calamine lotion (N.F.) and the use of bland dusting powders. Resistant areas may be painted with 3% aqueous solution of gention violet each morning and the use of a lotion or powder at night.

The ring worm infections of the feet ("athlete's foot") usually present themselves as an intertriginous involvement between the toes, a hyperkeratotic or vesicular eruption on the soles; and in the vesicular type there may be considerable pruritus of the affected regions. Deep vesicles of a "sago grain" type may appear upon the palms (trichophytids), and these lesions may be intensely pruritic. In this type of involvement it is essential first to clean up the infection on the affected feet by wet dressings of potassium permanganate solution of 1:3 or 5:000 dilution together with fractional X-Ray; the use of a fungicidal powder and a fungicidal ointment, e.g. Whitfield's ointment (N.F.) or one containing oxyquinoline benzoate. Large vesicles or bullae should be opened under antiseptic conditions, and then the parts soaked in permanganate solution.

Eczema[4] is a term most often used by both physicians and laymen in referring to any nondescript superficial non-infectious inflammatory itching eruption. The concept of eczema varies with the individual dermatologist or practitioner, and the present tendency is to exclude all forms of dermatitis which have a definite cause. With improvements in etiologic research, and investigative methods in obscure dermatoses, the large group of eruptions previously included under this heading has been greatly restricted. The term eczema, in a strictly limited sense, has been used to describe general or localized patches of dermatitis of unknown etiology. When the exciting factor becomes known it is called dermatitis with the addition of a qualifying adjective to indicate its etiology. In the old conception of eczema a large number of cases of dermatitis due to contact with various irritants was included, and this group has been narrowed down in the light of fruitful investigation in industry[5a, 5b] and in the causal irritants in ordinary household contacts, and even the irritant action of soaps. Many eczemas have been found to be dependent upon allergic causes such as fungi, bacteria, metabolic products or certain foods. Time does not permit a detailed discussion of neurodermatitis and atopic eczema. From the discussion thus far, implying a complex etiology for eczema, it is obvious that the management of eczema frequently taxes the therapeutic resourcefulness of the practitioner, and that all possible exogenous[6] causes be first ruled out, and then avoided; and bland soothing methods of treatment used. With exacerbations in a patient, that bear a definite time relation to irritant contacts or the ingestion of certain known offending foods; or allergic investigation, or elimination diets[8], revealing specific sensitivity to articles in the patient's diet, it is well to interdict the use of these foods preparatory to or in conjunction with local therapy. In acute eczema the use of soothing lotions and bland ointments are indicated, to be followed by ointments containing Ichthyol, Naftalan; or washed Crude Coal Tar combined with zinc oxide, corn starch and vaseline (White).

Urticaria is a common dermatosis characterized by the presence of wheals, pruritus or "hives" as the sole primary signs. The lesions develop rapidly to a variable intensity associated with pruritus and may rapidly regress, leaving no visible marks in the acute type. The lesions may appear on any part of the skin, and many of you are acquainted with that type of giant urticaria involving the lips and mucous membranes of mouth and throat, where breathing has been difficult for the patient, and you were wary of the patient's welfare before the swelling subsided. In the acute types there is frequently a history of previous ingestion of unusual foods, e.g. shell fish and sea food, or strawberries, or the ingestion of some article of diet to which the patient has, from previous experience, known to be sensitive. Drug ingestion[7] may also be a factor. In these cases withdrawal of the drug, local soothing therapy, starch baths, alkalies, and a mild laxative together with calcium or Sodium Thiosulphate by intravenous injection are often helpful in shortening the period of the acute attack. Chronic urticaria is a much more formidable therapeutic problem. It is wise to forbid the use of alcoholic beverages, check carefully the ingestion of all drugs,[7] e.g. aspirin, and try to establish a "time relation" between the ingestion of commonly known offending foods and the appearance of the eruption. In protracted cases the use of elimination diets[8] may be of value. The factor of emotional tension[9] must also be considered, and in these cases the use of calcium gluconate by injection or per os, or the use of autohemotherapy can be considered. The papulous squamous group includes that large group of dermatoses in which the eruptions are characterized by papules and associated scaling, and where itching is a variable feature.

The clinical picture of pityriasis rosea is characteristic and well known by the onset of the "herald patch" and the occurrence of oval scaling lesions parallel with the lines of cleavage of the skin and with each other, and with the greatest involvement of the axillae, and sides of the trunk. This is a non-contagious self-limited cutaneous disease in which soothing local applications, e.g. calamine liniment with 1% phenol is indicated together with corn starch baths, and sub-erythema doses of the ultraviolet light to shorten the course; and make the patient more comfortable.

The picture of psoriasis, I am sure, is well known to all of you, and needs no further detailing here. The therapeutic response of this disease is still a variable one, and remains an important and difficult task for the physician. Its cause is still unknown, and time precludes a detailed discussion of the pro and con of the various new available therapeutic suggestions in this disease, and for this discussion I refer you to some of the newer texts on dermatology and dermatologic therapy.[10] I Aching is variable in psoriasis and, as a rule, is not marked.

The Grütz low fat diet has been advocated in this disease, and I might tell you that while it has given great benefit in some cases, the response in others has been quite variable.

Lichen Planus is a papular disease of the skin and mucous membrane in which smooth glistening angular papules, associated with more or less itching, occur on the flexor aspects of the wrists and forearm, and may be associated with generalized distribution of papules on the trunk. Its exact etiology is unknown, but the factor of an emotional strain or shock in its etiologic relationship is one to be seriously considered. In treatment, mental and physical rest should be obtained, and X-Ray used over intensely pruritic areas or over the spine[11] together with Mercury with Chalk or Arsenic by mouth and 1% Bichloride of Mercury in normal saline, or Mercury Salicylate in oil, intramuscularly, may be used. Soothing antipruritic lotions should be used, as indicated.

In seborrheic dermatitis we have an inflammation dependent upon a constitutional condition. Seborrhea is characterized by excessive sebaceous activity and disturbance of fat metabolism. The parts affected are the so called seborrheic areas where the oil glands are most numerous, e.g. the scalp, nasolabial region and mid portion of the chest. Itching of variable intensity may be associated with the cutaneous signs. The involved patches in this condition are greasy and scaly. The local treatment of this condition begins with proper care of the face, and scalp; shampooing and the use of a good soap. Sulphur and salicylic acid ointments are applied to the affected areas, the patient put on a low fat diet, and chocolate, nuts, and

starches avoided in the diet. Sub-erythema doses of ultraviolet light to the trunk and scalp are beneficial. Sulphur in lotion or ointment form is of value for topical applications. Vitamin B Complex in capsule form per os is also beneficial.

After having eliminated the entities just discussed as factors in the cause of itching in a patient in question, then it becomes necessary to rule out the constitutional causes that may contribute to itching, e.g. diabetes, nephritis, and jaundice, the latter being one of the common and very important causes of generalized pruritus. Here, however, the icteric tinge to the skin and sclerae will aid in the diagnosis of the cause and confirmation may be obtained by appropriate laboratory investigation for the icterus index, blood bilirubin values, and appropriate history and medical check-up as to the cause of the bile stasis. Soothing antipruritic applications such as bland ointments and lotions containing Phenol; plus appropriate treatment to the pathology in the gall bladder and liver are indicated. If the cause of itching is still obscure, then it is essential to do a blood count to see if there is any alteration or increase in the white blood cells. This portion will be elaborated on later when the lymphoblastomas[12] are discussed.

Pruritus Hiemalis or winter itch denotes that type of itch which affects certain individuals in the fall and winter months. The skin of these patients is usually dry, and in women, who bath frequently, the incidence of this condition is closely linked up with bathing and may be due to strongly scented soaps; in response to the skin health and beauty promises made them by certain "radio commentators." Except for general dryness of the skin, and occasional mild scaling, there may be no skin lesions with the exception of a few scratch marks over areas that have been recently irritated. The reduction of the frequency of bathing, and the use of linit corn starch, almond meal or bran in the bath is indicated together with an unscented superfatted soap. If these simple measures do not suffice for relief then one must consider the possibility of deficiency of Vitamin A being a contributory factor, and it is well to give the recalcitrant cases at least 50,000 units of Vitamin A daily. The use of local oily preparations, e.g. nivea skin oil rubbed on the body after bathing and on retiring, is also beneficial.

In the aged individual with a thin wrinkled skin and little subcutaneous fat; senile pruritus may occur and itching is frequently the commonest subjective symptom. General examination for contributory factors, e.g. arteriosclerosis, sub-threshold uremic states, and prostatism must be looked for. The wearing of warm underclothing, and daily massage of an oily lotion, e.g. nivea oil should be considered. Any constitutional conditions should be treated, and intractable cases sometimes respond to the use of the androgens or may require a change to a warmer climate.

Dermatitis Herpetiformis is a chronic recurrent cutaneous eruption associated with itching and characterized by the development of polymorphous lesions, papules, vesicles, bullae and wheals which show a tendency to grouping, especially on the trunk. Itching is usually intense, and may be associated with stinging and burning sensations. The eruption is of chronic recurring character usually associated with eosinophilia and a good state of general health. Eosinophils are also found in the serum of the bullae and vesicles, when present. The disease is often refractory in its response to treatment, and suberythema doses of ultraviolet light as a general body bath is indicated together with arsenic in the form of Asiatic pill or Fowler's solution by mouth, or Sodium Cacodylate by injection. Liver Extract, Calcium Gluconate and autohemotherapy has also been used with benefit in some of these cases.

Lymphoblastomas:[12] The Lymphoblastomas represent a group of nepolasmas originating in the hematopoietic and reticular tissues. The various type are closely related, and transitions from one into the other have been reported. The bormis are those enumerated on the chart, and this group is often spoken of as the white blood cell dyscrasias, and are often associated with varied types of skin lesions and a very severe type of generalized pruritus. The cutaneous phenomena, may be of generalized character, and range from the erythema multiforme type of lesions to exfoliative dermatitis. When a patient is seen with chronic intractable pruritus and a nondescript multiforme type of eruption on the skin, or an associated generalized exfoliative dermatitis, it is important to examine

the blood to rule out any evidence of increase or change in the white blood cells. One should also carefully examine for adenopathy in such a case, and remove a gland for histologic study, and the results of these examinations will usually place the case in the proper classification. The prognosis in most of these entities is grave, and treatment, as a rule, only palliative.

The role of the psyche has been receiving attention by the dermatologists as well as the internist, and the psychoneurogenic reactions of the skin[13] have been discussed by many writers. Neurotic excoriations[14] are asymmetric eruptions produced voluntarily by the patient who is siezed with an uncontrolled desire to scratch or injure his skin, and the cutaneous eruption may vary from a simple scratch mark to a coin-sized excoriation or ulceration. These patients usually present stigmata of hysteria, e.g. decrease of the corneal and pharyngeal reflexes with geometric areas of hyperesthesia and hypoesthesia. Many of the individual lesions sometimes exhibit a wedge-shaped form from implantation of a finger nail in the skin together with a linear excoriation extending from this wedge point, and this should make one suspicious of a factitious dermatitis. The cooperation of the patient, after a full discussion in a sympathetic manner, of the nature of the eruption, and the use of antipruritic lotions are advisable. Bromides and thyroid[14] are also of aid in the treatment of these cases. Intractable cases may require psychiatric care.

Factitious dermatitis artefacta is an artificial dermatoses produced by the patient by scratching or digging into the skin or burning the skin with chemicals or some mechanical means to obtain sympathy. In this connection, I should like to relate briefly the history of a patient who came under my care some years ago. A girl in the early twenty's from Kentucky was employed as a nurse girl in the home of a dentist in a Chicago suburb. She enjoyed her new surroundings very much, and liked living in the Chicago region much better than in the small community from which she came. After a reprimand for inefficiency her employer indicated that she might have to send her home, and this disturbed the girl since she did not want to return home. She retired to the attic of the house in which she was employed to meditate over her plight, and her eyes struck a can of Drano on an attic shelf, and she thought that if she could feign illness her employers would certainly not send her away if she was not well. She accordingly moistened the Drano and applied it to scattered areas on her skin with resultant superficial ulceration, and presented herself at the skin clinic for advice and treatment, where I saw her. The bizarre character of the lesions, the elongated droplet-like formations where the caustic liquid had run over the side of the thigh, over the iliac crests were "tell-tale," and when this patient was confronted with the fact that these lesions may have been produced by her, she readily admitted the conflict in her life, and the reason for producing the lesions. This case was handled relatively simply with psychiatric aid. Many, however, are much more complicated and require long patient psychiatric handling to run down the cause and obtain a good therapeutic result.

I have tried, in the short time allotted me, to give you a perspective, with the aid of a chart (1), of a number of cutaneous entities that must be considered in any case of generalized pruritus. I have also attempted to touch the signal spots in differential diagnosis. My therapeutic comments have, of necessity, been brief because I feel that after you have once classified an eruption you can then refer to any dermatological text book or a therapeutic text[10] for more detailed therapeutic information. I have also attempted to show that a patient with pruritus who presents cutaneous signs may be suffering with a skin entity of exogenous origin or varied internal origin, and that the pruritus may be the cutaneous expression of systemic disease, and it then behooves you to use your diagnostic resourcefulness to "run down" the cause of the itching by proper clinical and laboratory examination of the patient.

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THE TREATMENT OF SAPHENOUS VARICOSITIES

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During numerous discussions of the varicose vein syndrome a series of identical questions have been repeatedly raised. This indicated that there still exists an imperfect understanding of the factors underlying the varicose state and their relation to the mode of treatment. For this reason a summary and chart of the modern management is presented which should clarify the situation. This plan is safe, simple, and uniformly satisfactory. It is based on certain fundamentals of anatomy and physiology which have been described in detail in a previous paper.

Varicose veins almost always involve either the long or short saphenous or their tributaries. These dilatations are often associated with valvular incompetence which is, in turn, responsible for the pathological circulation within the vein. Slowing of the rate of flow takes place, and in advanced cases reversal of the direction may occur. Straining, coughing, or any effort which increases the intra-abdominal pressure will compress the soft walled caval vessels and produce a rapid elevation in pressure within the incompetent saphenous vein. This surge is transmitted down the length of the blood column damaging vessel walls, valves which may still retain some function, and even the capillary bed. It is this trauma, together with stasis, which is responsible for the progressive development of varicosities and their complications. The interruption of this pathological pattern is the aim of modern treatment.

Saphenous varicosities fall then into two practical categories; those in which the valves are apparently functioning normally, and those in which they are incompetent. The first group are usually isolated saccular or cylindrical dilatations in which there is as yet only a moderate amount of trauma and stasis with no clinical evidence of venous reflux. The second and more important group includes those cases in which there is involvement of the whole long saphenous vein associated with venous reflux. *The management of the condition is determined by the group in which the case belongs.*

Cases may be separated into the two divisions by performing the classical Trendelenburg test. This test and the interpretation is described in the accompanying chart.

In cases where there is a negative Trendelenburg test, simple injections of a sclerosing solution will yield a high percentage of cures and produce a satisfactory cosmetic result. In these vessels there is little back pressure and consequently little tendency to recanalization.

Where incompetent veins exist, and this is the more common condition, some means must be devised to prevent the transmission of the pressure surges into the defective vessels. If these varicosities are obliterated with a sclerosing solution, recanalization almost always occurs. A more radical procedure is necessary to obtain a permanent result. Surgical ligation of the incompetent veins must be performed. Most often, a high saphenous ligation (at the Fossa ovale) is necessary. Occasionally one or more incompetent communicating veins must be tied off, and rarely, an incompetent short saphenous.

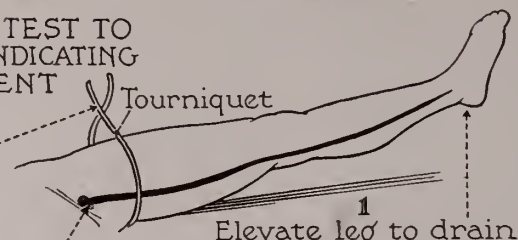
Incompetent communicating veins have not been found as frequently as in Linton's clinic. Consequently, ligations of this type have been performed only occasionally. When done, they have been limited to local dissection, ligation,

From the Varicose Vein Clinic, Division of Surgery, Northwestern University Medical School; and The Chicago Memorial Hospital.

Presented before the Section on Surgery, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 22, 1941.

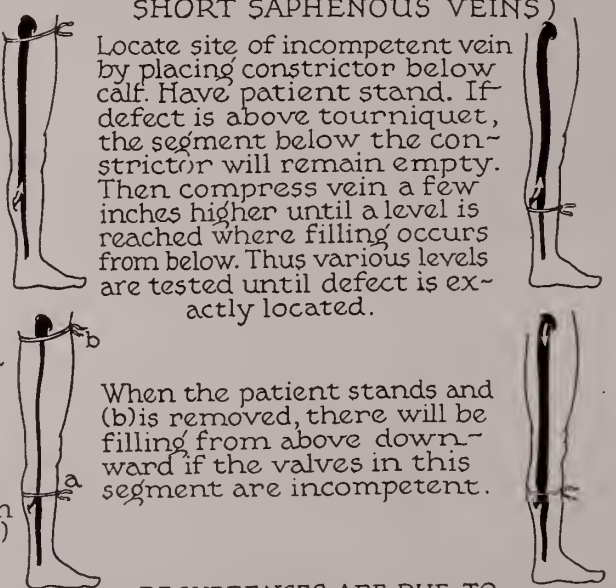
TREATMENT OF SAPHENOUS VARICOSITIES

USE TRENDELENBURG TEST TO CLASSIFY CASE, THUS INDICATING TYPE OF TREATMENT



A COMPLETE PHYSICAL EXAMINATION and DETERMINE:
↓
BLOOD PRESSURE
WASSERMAN REACTION
URINARY CONTENTS

TYPE OF CASE		TREATMENT
I. NEGATIVE TRENDELENBURG TEST (WHERE VALVES FUNCTION NORMALLY)		
Tourniquet in place. Vein stays empty 1 min. It fills slowly from capillary bed.	When tourniquet is removed, there is no change in the tension within the vein.	TO TEST FOR SENSITIVITY inject intravenously 0.5cc. of 2% sodium ricinoleate. If no allergic reaction, therapeutic doses of 2.0cc. may be injected at weekly intervals. Usually two injections are given at each visit. If veins are large, inject with leg elevated. If varicosities are small, inject in the standing position.
II. POSITIVE TRENDELENBURG TEST (WHERE VALVES OF LONG SAPHENOUS ARE INCOMPETENT. OCCURS IN 70-80% OF CASES)		
Tourniquet in place. Vein stays empty for 1 min.	With removal of tourniquet, the varix fills immediately from <u>above downward</u> so that tension within vein is suddenly increased.	TEST FOR SENSITIVITY. One week later perform a saphenous ligation at the sapheno-femoral junction. All tributaries should be tied and sectioned. Expose trunk vein, inject 4cc. of sclerosing fluid. Doubly ligate vessel and excise the intervening segment. Two weeks later injection of remaining patent dilatations is begun.
III. DOUBLY POSITIVE TRENDELENBURG (INCOMPETENCE OF COMMUNICATING OR SHORT SAPHENOUS VEINS)		
Tourniquet in place. Vein fills within 20 sec. Site of the incompetent vein	Locate site of incompetent vein by placing constrictor below calf. Have patient stand. If defect is above tourniquet, the segment below the constrictor will remain empty. Then compress vein a few inches higher until a level is reached where filling occurs from below. Thus various levels are tested until defect is exactly located.	TEST FOR SENSITIVITY. One week later, at the time of operation, mark with an indelible dye the site of the incompetence. This is where the incision must be made. All incompetent channels are tied off where they perforate the investing fascia. 2cc. of sclerosing solution may be injected in the distal segments. Two weeks later obliteration of the remaining channels is begun.
If an incompetent long saphenous as well as a communicating vein exists, locate with two tourniquets. The first is applied above the level of the communicating vein (a) and the second (b) just below the fossa ovale.	When the patient stands and (b) is removed, there will be filling from above downward if the valves in this segment are incompetent.	



RECURRENCES ARE DUE TO;

1. INJECTION, WITHOUT LIGATION, OF A VEIN IN WHICH THERE ARE INCOMPETENT VALVES.
2. LIGATION OF AN INCOMPETENT VEIN TOO FAR BELOW THE FOSSA OVALE.
3. NEGLECT TO TIE OFF ALL TRIBUTARIES AT THE SAPHENO-FEMORAL JUNCTION.

and division of the vessels where they perforate the investing fascia of the leg. Short saphenous ligation may be performed through a transverse incision in the popliteal fossa at the junction of the superficial vessel with the deep (popliteal) vein.

The great majority of cases need a high saphenous ligation. This has, in recent years, been combined with the retrograde injection of a sclerosing solution at the time of operation. Complete thrombosis of the trunk in the thigh and often down to the calf of the leg is obtained, thus reducing the number of subsequent injections necessary to occlude the varices. In addition, it insures complete obliteration of the varix in the thigh. This is helpful in the obese patient where the veins are deeply inbedded in fat and difficult to locate and inject through the skin.

These ligations must be treated as major surgical operations and it is courting danger to perform them in the average office. As strict asepsis is necessary, they should be done only in the hospital or well equipped surgical out-patient department. The patient may go home immediately after the operation if he is within call of the surgeon, but it is preferable to have him remain over-night in the hospital so that if any bleeding occurs it may be quickly checked.

One week before operation a small dose (0.5 cc.) of the sclerosing solution is given intravenously to test for any allergic sensitivity. Sodium ricinoleate (a Wm. S. Merrell Co. product) is preferred because in the two and one-half years it has been used, there have been no allergic reactions and only two sloughs. This covers experience in two clinics and in private practice. The two percent strength is used in preference to higher concentrations because it produces satisfactory obliteration of the veins with less pain, and with less danger of producing a slough if peri- vascular infiltration should occur.

The technique of high saphenous ligation is as follows: The inguinal region on the involved side is shaved and cleaned with water, green soap, and alcohol. The patient then stands and the course of the trunk vein is marked with an indelible dye. This is facilitated by doing a percussion-palpation test (Schwartz). The varicosities are tapped or quickly compressed so that an impulse is transmitted the length of the semi-rigid column of blood. This impulse may be palpated up to the Fossa ovale and it is here that it should be carefully marked. Testing the vein in this manner helps place the incision directly over the main channel.

The patient is then placed on the operating table and prepared and draped in the usual manner. Local anesthesia with 0.5 or 1.0 percent novocaine is used. A Pitkin syringe aids infiltration and helps eliminate the danger of an intra-venous injection of the anesthetic.

The Fossa ovale usually lies about one inch lateral and one inch below the pubic spine and this is the ideal site for the incision. However, in many people particularly the obese ones, this location falls in the inguinal crease. Any incision here is apt to become infected because of maceration of the skin and an associated large bacterial population. We prefer to make the incision just below the inguinal fold (within one inch) and parallel to the flexor creases. This oblique exposure is adequate to isolate the vessel and its tributaries and results in a good cosmetic scar.



Figure 1. The saphenous vein and tributaries at the site of ligation. Note the saccular dilatation at the lower margin of the incision.

The skin is incised directly over the saphenous trunk; the wound being about two and one-half inches long. The vessel is located between the superficial and deep investing fascias. If there is difficulty in finding it, one may move the leg

and palpate the belly of the Adductor longus muscle which is just medial to the vein.

The trunk and all tributaries in the region of the fossa are dissected free with a minimum of trauma to prevent the formation of a thrombus. (Figure 1) The branches are doubly ligated and sectioned. Two ligatures are placed around the saphenous trunk, the upper one as close to the junction with the femoral as is possible. These are not tied but left loose until after injection of the sclerosing solution. Two cc. of the two percent sodium ricinoleate is used. It has never been found necessary to use larger volumes of solution or the catheter method described by Pratt to obtain complete obliteration of the varicosities down to the mid-calf.

The sclerosing solution is drawn into a luer-lok syringe which prevents spilling of the material into the operative field. A bent, short bevel, 19 gauge needle* (Figure 2) is attached to the syringe and the point inserted into the lumen of the vein in the segment between the two loose ligatures. Blood is aspirated to make sure that the lumen has been entered, the proximal ligature pulled taunt to compress the vessel, and the injection made. The bent needle has been of great value in performing the injection, especially where the vessel is located deep in the wound.

The proximal ligature is tied at the junction with the femoral vein, and the lower one is tied as far below as is possible. The intervening segment of vessel is excised. A second ligature may be tied around the proximal stump to safeguard against hemorrhage. Transfixing of ligatures is unnecessary. The superficial fascia is closed with one or two sutures to obliterate the dead space and the skin edges are approximated in the usual manner. Silk is used throughout because less tissue reaction is produced and there is little tendency for the ligatures to loosen.

A figure-of-eight compression bandage is applied to prevent oozing and to close the spaces of the wound. In addition, an elastic adhesive bandage may be applied from the foot to the thigh if there are very large dilatations. This tends to collapse the varicosities and decrease the size of the thrombus so that there is less pain and discomfort.

*Manufactured by the Becton-Dickinson Co.

Whether these patients stay in the hospital or go home they must not go to bed but remain ambulatory. This is to stimulate the circulation, increase the rate of flow of blood, and thus eliminate any tendency for propagation of a thrombus. One week after operation the skin sutures are removed and after another week the injection of any remaining patent varicosities is begun.

This procedure is safe, simple to perform, and is most important in the cure of varicose veins in which incompetent saphenous valves are present.



Figure 2. The technique of the injection of the sclerosing solution using the bent needle.

There are only a few contra-indications to the operation. These include the presence of any severe systemic disease, any *acute* infectious process (whether it be phlebitic or otherwise), abdominal tumors, and senility. The presence of an old deep vein thrombophlebitis is *not* recognized as an inviolable contra-indication. The deep system of veins has a remarkable capacity to recanalize and form new channels. The presence of a chronic pitting edema in these cases is most often due to the destruction of the valves by the phlebitis so that a functional "obstruction" remains. If an actual mechanical block exists, it may be easily demonstrated by a modification of the Perthes test. The patient is instructed to stand and a tourniquet is applied around the thigh tight enough to occlude

the superficial veins. Then the leg is elevated and the tension within the varicosities noted. If the deep veins are occluded, there will be no emptying of the varices; but if patent, the superficial veins will immediately collapse. Incompetent varicose veins which have developed as collateral circulation during the obstructive phase of a deep thrombophlebitis remain after the channels reopen. These superficial vessels only add to the load carried by the venous system and therefore should be obliterated.

Varicose veins occuring during pregnancy, if causing much discomfort, may be injected. It seems preferable to treat these dilatations conservatively with supportive bandages since many of them disappear with termination of the pregnancy. Sclerosing solutions containing quinine should never be used in this type of case.

DELAYED RUPTURE OF THE SPLEEN
(Discussion and Case Report)

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Cases of contusion and rupture of the spleen with delayed hemorrhage, while relatively rare, present such an interesting problem for clinical and pathological diagnosis when they do occur that it seems worth while to report the case to be described later. Cases of severe contusion of the abdomen with rupturing of the spleen and immediate massive hemorrhage into the peritoneal cavity are frequently attended by contusion of other viscera, as the liver or kidney, and are "blitzkriegs" demanding immediate defense measures of transfusion and operation with grave prognosis. There is no time for meditation and the diagnosis is made specific when the damage is surveyed at laparotomy. The same is true of stab and bullet wounds. These cases are essentially treatment problems and do not find their way into the literature as a rule, except in statistical summaries.

Most of the reported cases of delayed rupture, however, are stories of mistakes in diagnosis. The physician has been lulled to sleep by the smoothness of convalescence following the initial symptoms, only to have a rude awakening a few days later and to realize that his delay has jeopardized the patient's life. Having learned from his experience he reports his case, and hopes he will not make the same mistake again.

It follows that, although these delayed cases are relatively rare, Foster and Prey[1] finding only one in twenty cases of rupture of the spleen in the records of four Denver hospitals from 1927-28, they are the ones reported. Even so, Gardiner,[2] in 1935, stated that there were only about 50 cases in the literature, most of them reported in the last twenty years.

LaPorte[3], in discussing delayed rupture of the spleen, reviews cases reported in French literature, stating that Demoulin in 1904 reported a case operated on in 1885, in which the spleen did not rupture until five days after the accident. Other cases mentioned by LaPorte include that of Routier in 1914, in which a youth of 18 continued playing after a trifling injury and eight days later had violent cramps diagnosed appendicitis, and two cases of Fiolle, who described the quiescent interval and called it a "latent period." (According to McIndoe[4], the first man to use the term "latent period" was Baudet in 1907.) LaPorte mentions six other cases and describes two of his own, the first of which is typical. A gardener of 32 went to bed after a compression injury, improved steadily for two days and then was seized with acute subumbilical pain and weakness. After a few hours the pain shifted to the left hypochondriac region, the face became ashen and the pulse rose to 110. The left upper quadrant was doughy on percussion. Operation through an upper median incision, which was later made L-shaped, showed a spleen with a large subcapsular hematoma from which the hemorrhage was coming. LaPorte offers three explanations for the delayed symptoms: 1. The gradual formation of a subcapsular hematoma, which eventually ruptures. 2. A secondary hemorrhage following primary clotting. 3. The presence of a threshold of hemorrhage which has to be exceeded before hemorrhage takes place. He does not clarify this last theory.

A very complete discussion of the clinical and pathological picture of delayed rupture of the spleen is that of McIndoe[4] in 1932. McIndoe collected 46 cases in which the latent period between the injury and the "catastrophe" was 48

hours or more, varying usually between three and nine days and rarely lasting fourteen days.

McIndoe's own case had a latent period of nine days. He was hit on the left flank by a branch of a falling tree and had pain in the left side for ten minutes and then worked for seven days with slight nagging pain in the left upper quadrant. The onset was marked by severe upper abdominal pain radiating to the back and left shoulder. The pulse was 100, the temperature 99.2°, hemoglobin 48%, red cell count 2,720,000, and the white cell count 25,800. The diaphragm was elevated on both sides and there was a dull indefinite mass in the left upper quadrant which did not shift with position. Operation through a transverse incision showed a hematoma containing two liters of blood and five unattached pieces of spleen, extending over the stomach from the colon to the vault of the diaphragm, and a sixth piece of spleen attached to the pedicle. The pedicle was not bleeding actively.

His explanation of the pathology underlying the delayed rupture is that the blood is held in the splenic substance by the capsule. In minor contusions the hemorrhage is subcapsular and slight and is soon organized so that there is no persistent evidence of any injury, except perhaps slight scarring of the capsule and localized perisplenitis with adhesions. Even if the capsule tears a little, organization of the clot still takes place, though in this case perisplenitis with adhesion is more likely to be noted.

If the contusion is more severe, or has affected larger vessels, that is, vessels in the vicinity of the pedicle or hilum, a larger hematoma will result. If the capsule is not torn this will spread under the capsule. As the serous and fibrous part of the capsule are intimately united, both are mechanically raised from the splenic pulp, so that a subcapsular hematoma forms. There may be several of these hematomas, which tend to unite so that a large part of the splenic capsule is raised and bulging with blood. After a varying time the capsule, the nutrition of which is impaired by stretching, ruptures. If the hematoma is very large and the pressure correspondingly great, the rupture may be large enough to allow free blood to pour from the hematoma into the general peritoneal cavity, with symptons of sharp pain due to rupture, shifting rigidity and tenderness due to peritoneal irritation, and leucocytosis. The hemostatic effect of the capsule pressure is removed and the partially organized clot is torn apart and active hemorrhage starts again, causing the pallor, faintness and tachycardia noted. Sometimes the rupture is almost explosive or bursting, the spleen being torn to pieces, some of which have been found in the pelvis even.

At other times the capsule has several small cracks or tears either due to pressure from the subcapsular hematomas or made by the external forces at the time of injury. These cracks promptly fill with soft clot and small perisplenic hematomas result. Sometimes, in addition to the soft clot, portions of the omentum adhere to the lacerated edges forming an extra tamponade. Other adjacent organs are involved in the adhesions and the whole left hypochondriac region becomes walled off enough to produce Ballances' sign, a dullness not shifting with position. Kerr's sign, pain in the left shoulder, is due to irritation of the diaphragm and is found in other upper left quadrant pathology.

As a general rule, the hemorrhage continues and escape of blood into the general peritoneal cavity takes place, causing irritation symptoms suggesting pathology elsewhere, especially appendicitis, although preoperative diagnoses of ruptured peptic ulcer and subdiaphragmatic abscess have also been made.

A case illustrating these confusing symptoms is reported by Dodd[5]. The patient entered the hospital 40 hours after the injury with a temperature of 100°, pulse 110, and a tender cecum, but no local rigidity. An appendix incision showed blood in the belly. Another incision was needed to remove the spleen, which was twice its normal size and surrounded by "several closely adherent layers of thrombus which peeled off like onion skins. Apparently the blow caused a subcapsular injury and hemorrhage, whose waxing and waning stripped up and ruptured the capsule, forming the laminated perisplenic hematoma."

This "waxing and waning" of hemorrhage is discussed at length by Zschau[6]. Zschau divides delayed rupture cases into two types: 1. Those due to the formation and increase of a subcapsular hematoma, which he terms "two-stage rupture." 2. Those in which the delay

is due to clot formation in the region of injury, whether or not the capsule is involved, and the later hemorrhage is due to a force reopening the clotted vessels. The factors affecting these processes include:

1. Changes in blood pressure (the primary and secondary hemorrhage idea of LaPorte.)

2. Variations in the clot forming ability and adhesion forming ability of the splenic reticulum. In this connection Kellogg Speed calls attention to the function of the spleen as the graveyard of red cells, possibly furnishing all the material for clotting.

3. Changes in the volume of the spleen controlled by a center in the cord responsive to stimuli as the ingestion of a meal or the reception of a painful injury. These changes are made possible by the muscle fibers and elastic fibers in the trabecula of the spleen. There is evidence[7] also to show that the spleen changes volume in response to chemical substances in the blood acting through the cerebral bulb.

The diagnostic problem includes consideration of the injury. Too much stress cannot be laid on this, as a number of cases are reported of spontaneous rupture of normal spleens. Zuckerman and Jacobi[8] reviewed 25 such cases, ruling out trauma by lack of history, and pathology by microscopic study. Their case had an acutely congested spleen without attachment to the diaphragm and only loose attachment to the splenic flexure, leaving it freer to rotate than usual. The authors consider this embryological failure to develop normal attachments and consequently increased mobility with tendency of vessels to kink and cause congestion, as the underlying factor in spontaneous rupture. Other authors consider arteriosclerosis[9] responsible. The accidents reported are often very slight bumps, or strains even, as one during labor[10], one at the end of pregnancy,[11] one following massage[12], one after a parachute jump[13], one after coitus[14], one after bending over[15]. These, however, are very rare when one thinks of the hundreds of cases with contusion in the left hypochondrium, left lower ribs and left flank with no evidence of splenic involvement. Keeping the spleen in mind, should be sufficient safeguard in the consideration of etiology.

The real problem is this: If one suspects that he is dealing with a latent period, that is, if there is a little persistent pain and tenderness suggesting possible contusion of the spleen, should one operate early while the patient is in good condition, to prevent the final complete rupture that makes the case desperate? Does a mild contusion of the spleen ever organize and heal? Webb[1] thinks recovery without operation is rare, quoting Turnbull of London as stating that he had never seen a scar of injury to the spleen, and J. S. McCartney, who, in 25,000 autopsy records at the University of Minnesota, saw no instance of healed splenic hematoma, and E. T. Bell to the same effect.

On the other hand Gunther[16] reports a case from New Guinea of a 26 year old laborer who died of intestinal obstruction, whose autopsy showed a spleen twice normal size with a shallow concave scar extending almost the length of the viscus, its edges adherent to the parietal peritoneum, and a cavity at the lower end about one inch in diameter into which peritoneum had grown. A scar, 2″ by 1½″, was present on the left flank over the spleen. The diagnosis was of a penetrating wound of the abdomen lacerating the splenic capsule and causing local infection with healing. This case is not exactly typical as the element of infection enters in.

McIndoe[4] considered healing of small contusions very probable. Zschau[6] states definitely that many ruptures of the spleen are symptomless and heal either with formation of a blood cyst or by organization of clot with scar formation, a process represented by infarcts found at autopsy. He reports a case operated on eight days after injury in which the hemorrhage came from a tear six centimeters long half way through the pulp. This tear was not closed by clot, but in the splenic substance small collections of blood and red infarcts were found showing microscopic organization. He also reports a second case which showed typical symptoms of delayed rupture on the fifth day after injury, hemoglobin dropping to 60, pulse rising from 82 to 110, temperature running a degree of fever, all coincidental with the onset of pain. This case was *not operated* on as the patient responded to a transfusion of 300 cc. of blood and in six weeks had normal findings. Goinard, Viollet, and Marchione[17] state definitely that splenic hematomas are cured by progressive resorption, but admit that these "cures" are much less frequent than in the case of hemorrhages in the pelvis. They describe three cases with x-ray evidence of hemorrhagic cysts following injury to the spleen. One of these was proved

by operation; the others got well without operation. Other cases of "cure" have also been reported.

In one of these, Hunter's[18] case, operation three weeks after the injury revealed nine pints of fluid blood and a transverse laceration of the spleen two inches long filled with organizing clot. As there was no active bleeding the spleen was not removed. Convalescence was complicated by wound infection. The patient was discharged nine weeks after operation. Here again, as in Gunther's case, infection may have increased the tamponade effect of adhesions.

Pemberton[19], however, states that in 800 cases of splenectomy at the Mayo Clinic since 1904 only four showed cysts and none of these gave a history of associated trauma.

In spite of the possibility of spontaneous cure a decision not to operate after diagnosis is made, seems decidedly risky.

Aids in diagnosing a latent period include the two stressed by McIndoe[4]: the symptom of dull pain, remittent or exacerbating, in the left upper quadrant; the finding of slight rigidity in the left upper quadrant, determined by repeated examinations. Others are Kerr's sign, pain referred to the left shoulder, Ballances' sign, dullness in the left upper quadrant not shifting with position, and x-ray films showing an elevated diaphragm on the left side. The development of slight fever and leucocytosis are suggestive. Thorotrast[20] injections, followed immediately by films, may never come into widespread use but excellent films have been made showing rupture of the spleen. There is a large amount of literature on the visualization of the spleen with thorotrast.

Operation, if delayed until the emergency is apparent, as is usually the case, may be done through an L-shaped or transverse incision. Preliminary blood transfusion, transfusions during and after the operation, autotransfusion,[21] have all proved life saving aids to the operation. The operation should be that of splenectomy and drainage is unnecessary.

CASE REPORT

M.S., a 14 year old boy, a few days out of quarantine for scarlet fever, at 10:45 A.M., on June 6, 1936, collided with another boy while chasing a ball, the other boy's head striking him in the abdomen. He was brought to the hospital at once. The emergency room examiner noted "Marked tenderness over the suprapubic area, and marked rigidity of the entire abdomen. Cannot elicit gas gurglings over the entire abdomen." When I saw him at 6:00 P.M., there was considerable rigidity and tenderness in the left upper quadrant, the pulse was 92, and the patient was evidently in rather severe pain. The blood count showed 4,610,000 red cells, 18,600 white cells, and 70% hemoglobin. There was no rigidity or tenderness in the suprapubic region at this time, and I did not order catheterization. I thought that the boy probably had a contusion of the spleen but ordered an x-ray to determine the presence of air under the diaphragm to rule out possible perforation of a hollow viscus. The x-ray report read "The stomach is greatly distended with air. There is no evidence of air under either diaphragm." A blood count taken at 8:00 P.M., showed 4,800,000 red cells, and 13,600 white cells. The pulse was 90 and there was no evidence of active hemorrhage. I decided to wait.

The next day the stomach was still distended but the rigidity was much less. The temperature was 99.2° and on the following day 99.6°. Enemas reduced the distention and gave him enough relief so that on June 9 he sat up and in the evening went home. Here he stayed quietly for two days on a normal diet. I called on him on June 11. His pulse was 72 and he said he had no pain and wanted to go back to school.

On June 13, at 3:00 A. M., the boy's mother called me, saying that he was feeling weak and had vomited and broken out into a cold sweat. I found him pale and clammy with a compressible irregular pulse of 100. There was moderate pain, tenderness and rigidity in the left upper abdomen. I took him directly to the hospital where he was typed for transfusion and a pint of blood given before and another during the operation. The rigidity and tenderness disappeared when he was placed on the operating table. The peritoneal cavity was full of blood and the spleen lacerated so that it was difficult to palpate the pedicle, which required several ligatures. Convalescence was stormy, requiring several transfusions and many glucose infusions with decompression of the stomach and upper intestine with a Levine tube. He was discharged on July 11 and was in good health two years later.

The pathological report on the spleen read as follows:

Gross: Spleen 15 by 11 cm. There is a tear 7 cm. long in the region of the hilum. Section made by cutting reveals many hemorrhagic areas, particularly in the region of the laceration. The remainder of the spleen is red in color and somewhat firm in consistency.

Microscopic: Sections of the spleen made through the lacerated area show a dense deposit of red blood cells. The splenic pulp is covered by red blood cells.

Diagnosis: Traumatic hemorrhage into the spleen with laceration.

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TETANUS TOXOID IN THE PREVENTION OF TETANUS AND SERUM REACTIONS IN ALLERGIC INDIVIDUALS

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Since the introduction of tetanus toxoid by Ramon in 1923[1] many articles have appeared from abroad and in this country. We are particularly interested in its use in normal and in allergic individuals.

The proximity of war and war service emphasizes the importance of the prevention of tetanus and serum reactions. Active immunization by tetanus toxoid is already in use in military and naval forces, especially in those of France, Russia, Italy, Britain and the Dutch East Indies. The United States army, navy and marine corps will almost certainly adopt the procedure in the very near future.

Efficiency In Man — Tetanus toxoid when given correctly prevents tetanus and the many serum reactions which have followed injections of tetanus antitoxin. No case of tetanus has as yet developed in an immunized person, according to Ramon[2]; he states that more than 1,500,000 persons have received tetanus toxoid in France alone.

In the first issue of "Military Medicine," published in March, 1941, there is an interesting observation by Jordan and Halperin[3]. They point out that immunization of the British army with two doses of plain toxoid with a six week interval was introduced more than a year before the beginning of the present war. When the war broke out over ninety percent of the troops in the forward area were fully protected against tetanus. The Dunkirk evacuation battle provided a good test of the efficacy of the treatments. Many men arrived in Britain five or six days after being wounded and without tetanus antitoxin. Not one case of tetanus developed among the ninety percent of troops who had had tetanus toxoid immunization; on the other hand, there were eight cases of tetanus in the approximately ten percent who had not been immunized. Jordan and Halperin emphasize that this is the best and most important clinical test yet available of the effectiveness of tetanus toxoid in man. No doubt, as the war goes on, we shall have many further reports from the various armies as well as from the civilian population which is being indiscriminately bombed.

Efficiency in Animals — Ramon[2] has given convincing testimony concerning the duration of immunity in horses. Since 1925 active immunization of horses by tetanus toxoid has been carried out in France, especially in the cavalry. Thousands of horses[4] have been immunized by two injections of 10 cc. each at intervals of one month; a year later a third 10 cc. injection is given. These horses do not receive serum or toxoid when wounded. Studies for over nine years in 22,000 horses and mules have shown no deaths from tetanus; one animal developed tetanus but recovered. From 1925 to 1929, previous to the use of toxoid, 50 of 13,600 horses developed tetanus and 30 animals died; these deaths occurred despite the use of preventive tetanus antitoxin.

Experimentally, too, immunization with tetanus toxoid protects against both tetanus toxin and live tetanus spores. This has been shown

Read before the American Association for the Study of Allergy, June 3, 1940, Cleveland, Ohio.

by Ramon and Descombey[5] in the horse, and by Sneath and Kerslake[6] in guinea-pigs. The introduction of live spores did not kill animals to whom sufficient toxoid had been given.

Why Tetanus Toxoid? — Most of us are probably familiar with the advantages of tetanus toxoid over tetanus antitoxin. But, as Firor[7] recently stated, "the American medical profession has been amazingly slow to realize that the prevention of tetanus can be effectively accomplished by active immunization against the disease. The great majority of practitioners wait until a suspicious injury occurs and then give a prophylactic injection of antitoxin. The failure of these doctors to permanently protect their patients from tetanus by the use of toxoid comes either from ignorance of its existence or from misgivings as to its efficacy."

Cooke and his coworkers[8] sum up the advantages inherent in active immunization with tetanus toxoid as follows: (1) the serum antitoxic titer may be raised by toxoid to a level higher than that afforded by the usual prophylactic dose of tetanus antitoxin; (2) the immunity is much more lasting and (3) it can rapidly be re-elevated to a much higher level by a subsequent injection of toxoid at the time of injury, the so-called stimulating dosage; and last, but not least, (4) it avoids the very real danger of serum sickness and serum sensitization. We may add that (5) local reactions from the toxoid are not severe, as a rule, and that (6) general reactions are rare and are easily controlled.

Furthermore, we must remember that, while tetanus itself is a comparatively uncommon disease in civil life, the mortality from tetanus remains high. Spaeth[9] reported twenty-one deaths in sixty-six cases despite the use of antitoxin, sedatives, and a special team of workers in this field. It must be realized that under war conditions and even in civilian life away from large cities, the death rate is much higher as antitoxin is not always readily available. Individuals who are immunized by toxoid need no antitoxin except in very rare instances.

Preparation of Toxoid — Several different toxoids have been or are in use; the formalinized preparation originally prepared by Ramon is still widely advocated; alum-precipitated toxoid is in favor in this country and is prepared by precipitating the formalinized toxoid with potassium alum. Jones and Moss[9] showed in guinea-pigs that two injections of alum-precipiated toxoid produced a higher immunity than did three injections of the ordinary formalinized toxoid. Gold[10] confirmed this in man. The alum precipitated toxoid is better than the plain formalinized because it acts more slowly and therefore stimulates antigenic response over a longer period of time with a greater production of antitoxin.

Technique of Administration — A great deal of work has been carried out not only in the choice of the preparation but also in regard to the number of injections and to the intervals between injections. It is probably the concensus of opinion that two injections of alum precipitated tetanus toxoid injected subcutaneously at intervals of two to three months will protect almost all individuals. The favored dosage is 0.5 cc. each time, although some use double this amount. After the two injections the amount of tetanus antitoxin in the blood serum increases to over 0.10 unit per cc., an amount which is amply protective against tetanus. It has also been demonstrated that the amount of antitoxin in the serum decreases steadily from its peak and if not reinforced it will eventually sink to a level too low for safety. But an extra stimulating injection, given approximately six months or a year later, causes a rapid and tremendous increase in the serum titer; this has lead to the use of this extra injection of toxoid, instead of antitoxin, at the time of injury, in individuals who have previously been immunized by toxoid. After this third injection the immunity persists for a very long interval without further reinforcement; this has been well shown by the absence of tetanus in the French cavalry. Among the workers who have contributed to this subject are Ramon and Zoeller,[11] Lincoln and Greenwald,[12] Sacquépée,[13] Sneath,[14] Sneath and Kerslake,[16] Gold,[10 and 15] Jones and Moss,[9 and 16] Bergey and Etris,[17] Bergey, Brown and Etris,[18] Brown,[19] Rogers[20] and Kestermann and Vogt.[21]

Hall's recent paper[22] on tetanus toxoid immunization in the United States Navy has an excellent summary. Since 1934 Hall has immunized more than 3,400 midshipmen at the

Naval Academy with two doses of alum precipitated toxoid given eight weeks apart; he states that the procedure is ideally fitted for military services. A third dose of toxoid is given at once should injury occur after the primary injections. He points out that serum sickness has disappeared since the use of toxoid. Hall advises re-injection every four years.

Reactions From Tetanus Toxoid — Reactions from tetanus toxoid have, on the whole, been of a minor character. Local reactions are rather frequent and, in a few cases, the local swelling has been fairly marked. But the swelling subsides without suppuration. In Hall's series[22] he had a rather large number of reactions, 50 in 1800 individuals, with 38 very sore arms; there were some instances of fever and malaise and four cases of urticaria and one of anaphylactic shock. On investigation he found that the toxoid had not been sufficiently washed. On changing to another lot of toxoid there were no further reactions.

Gold stated that in over a thousand injections only one systemic reaction occurred and that all local reactions subsided in two or three days.

Systemic reactions have been exceedingly rare when we consider the enormous number of persons who have been or are being immunized. Whittingham,[23] in England, states that 61,042 healthy individuals were given two one cc. injections at intervals of six weeks; local reactions occurred in about one percent of the cases. General reactions, with shock and urticaria, followed the second injections in two persons. In both of these large positive scratch tests were obtained to Witte's peptone, an ingredient in the toxoid used. Parish and Oakley[24] and Cunningham[25] have each reported a case of shock and urticaria, also with positive skin tests to Witte's peptone. Cooke and his coworkers[8] have had one case of severe angio-neurotic edema and urticaria following the second dose. They recommend routine scratch tests with the toxoid before the second injection is given. Gold[15] also reported urticaria in one patient. Fortunately, all of these patients recovered very promptly after the administration of epinephrin. There is no record of any fatal reaction from tetanus toxoid. The presences of allergy is no contraindication to the use of toxoid.

Combined Toxoids And Vaccines — Time will not permit a discussion on combined immunizations, but it may be pointed out that when diphtheria and tetanus toxoids are given together the resultant titers of serum antitoxin have been shown to be enhanced one by the other, as reported by Jones and Moss,[26] Ramon and Zoeller[27] and Von Canon.[28] Otten and Henneman[29] are opposed to this combination.

In a paper just published Bigler and Werner[30] found that in 240 children the use of combined diphtheria-tetanus toxoid was safe, durable, reliable, and relatively free from reactions. They recommend this procedure in all children, allergic as well as normal. Ott[31] was one of the first to use combined diphtheria-tetanus toxoid in children. He gives two immunizing doses of the combined toxoids and then gives a stimulating dose of tetanus toxoid once a year.

Tetanus toxoid combined with typhoid and paratyphoid vaccine is also in use in some places, especially in the Italian army. Grasset and Girdwood[32] and MacLean and Holt[33] report excellent results with this combination.

Author's Series — In an effort to evaluate the risks, if any, in attempting to immunize allergic individuals against tetanus 171 patients were used. All of these had one or more allergic conditions, chiefly bronchial asthma and hay fever; some also were victims of urticaria, atopic dermatitis or allergic rhinitis. These patients were selected at random and their ages varied from 3 to 63. Table I lists the ages and it can be seen that the majority were in the second and third decades, although there were 23 children under 10 and 30 individuals over 40.

TABLE I — TETANUS TOXOID IN ALLERGIC INDIVIDUALS

Age	Number Cases	No. Local Reactions
0 - 9	23	5
10 - 19	43	3
20 - 29	46	6
30 - 39	29	3
40 - 49	19	5
50 - 63	11	1
Total	171	23

Sex: Male 102 Female 69

Total Number Injections 291

Percent Local Reactions 7.9%

Eight patients received combined tetanus-diphtheria toxoids, with one local reaction.

The routine used was as follows: two injections each of 0.5 cc. alum-precipitated tetanus toxoid[34] were given subcutaneously in alternating arms. The interval between injections was approximately eight weeks. All of these patients were receiving one or more other antigens for their allergic conditions, but the tetanus toxoid was given at a separate location.

A total of 291 injections have been given to these 171 patients and the immunization is being carried on in these individuals and in all new cases as far as possible.

There were no systemic reactions. In all cases there was a stinging sensation; 23 patients had local reactions, as shown by inflammation which lasted from one to three days; in three cases the swelling was very severe and in one of these the patient refused a second injection. All but two of these local reactions occurred with the first injection. When a local reaction occurred, the second dose was split (0.25 cc. at eight weeks and another 0.25 cc. at twelve weeks); by this method we avoided further local reactions in all but one case. The age and sex of the patient had no relation to the frequency of the local reactions. Eight patients not previously immunized against diphtheria received two to four injections each of combined diphtheria-tetanus toxoid, with a total of 2.0 cc. One local reaction occurred in this group.

TABLE II — TETANUS TOXOID IN ALLERGIC INDIVIDUALS

		Local Reactions
Total Number Immunized	171	
Previous Serum (Antitoxin)	28	1
Previous Serum Sickness	11	1
Horse Dander Sensitive (Clinical)	23	3
Positive Skin Test Horse Dander	40	5

From Table II it can be seen that in these 171 allergic individuals 28 had a history of previous tetanus or diphtheria antitoxin; eleven of these patients stated that they had had serum sickness after the antitoxin; this ranged from simple urticaria to anaphylactic shock. Interestingly enough, a medical student with hay fever developed tetanus after an injury and almost died after being given tetanus antitoxin. A local reaction occurred in only one of these 28 patients who had a history of previous serum. It must be emphasized here that in addition to the 28 persons known to have received previous antitoxin an unknown number had previously been immunized against diphtheria. Many of these individuals had probably received diphtheria toxin-antitoxin; despite the fact that this contains a very small amount (0.0001 cc) of horse serum, Gordon and Creswell[35] showed that the highest percentage of serum sickness following therapeutic serum (74%) occurred in those who had had previous toxin-antitoxin.

Another group was most interesting. There were 23 cases of proved clinical allergy to horse dander, most of them asthmatics. Only three local reactions occurred in this series.

In seventeen other individuals there were moderate to strong cutaneous or intracutaneous reactions to horse dander without proof of clinical allergy. In two of these local reactions occurred.

Comment — It is indeed comforting to realize that local reactions occur no more frequently in allergic individuals than in normal persons. It is especially pleasing to know that it is perfectly safe to immunize those who have had previous serum both with and without serum sickness; and that those who are allergic to horse dander can also be injected with tetanus toxoid with impunity. We all realize that it is in these two groups that an injection of ordinary horse serum antitoxin is fraught with great difficulty and great danger. These are the patients who most need and should receive tetanus and diphtheria toxoids.

To further protect our patients we give each of them, after the immunizing injections have been completed, a card to carry with them in a bill-fold or purse (Chart I). The patient is instructed to show this to any physician in case of injury so that he or she should at once receive a third or stimulating dose of tetanus toxoid instead of tetanus antitoxin. It has been amply demonstrated that this extra injection, even when given a year or longer after the first injections, protects against tetanus very promptly and very completely.

A locket can be worn around the neck which states that the wearer has been immunized and needs tetanus toxoid if injured, not tetanus anti-

toxin. This novelty appeals especially to children.

CHART I

TO WHOM IT MAY CONCERN:

This is to certify that
is highly allergic and has received two 0.5cc doses of TETANUS TOXOID (Lilly) to prevent tetanus.

In event that (he) (she) sustains an injury for which prophylactic dose of TETANUS ANTITOXIN would ordinarily be given, please inject instead 0.5cc. TETANUS TOXOID.

DO NOT GIVE TETANUS ANTITOXIN.

DATE

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Our findings are therefore in complete agreement with those of Gold[36] who found no trouble in immunizing allergic individuals.

It has recently come to our attention that the use of tetanus antitoxin in some industrial plants in and around Chicago has been almost completely dropped because of the great frequency of serum reactions. In one institution tetanus developed in an injured workman; the physician had not given antitoxin. This is indeed a sad state of affairs. These physicians are not using methods of treatment recognized as necessary, and they are targets for malpractice suits. It must be emphasized that in suspicious injuries tetanus antitoxin must still be used in those not previously immunized. But the situation in industry is a strong reason for routinely immunizing all workers, to prevent tetanus and serum sickness at the same time.

Recently the use of despeciated tetanus antitoxin has been suggested by Coghill and his coworkers.[37] The horse-serum is changed by Takadiastase which alters the specificity by acting on the carbohydrate fraction. Schaeffer and Myers[38] successfully treated a tetanus patient with this despcciated tetanus antitoxin. The man was sensitive to horse serum as shown by skin test and by systemic reaction when desensitization was attempted. He was able to take large doses, even intravenously, of this new despeciated serum.

The use of bovine antitoxin has been recommended by some. Glaser[39] recently reported its use in 38 children with only two mild reactions. Some of these patients were sensitive to horse serum. In the ensuing discussion Tuft advised bovine antitoxin in allergic individuals who are sensitive to horse serum but advised against its use routinely. Tuft pointed out that the dosage of bovine antitoxin is three times that of antitoxin from horse serum.

CONCLUSIONS

1. Tetanus-Diphtheria Toxoid should be given routinely in all children. If already protected against diphtheria, they should be immunized against tetanus.
2. All allergic individuals should receive tetanus or combined toxoid. This is especially indicated in those who have had previous horse serum and in those who are clinically sensitive to horse dander and serum.
3. Immunization of 171 allergic patients has been or is being carried out.
4. Reactions have not been serious. Local reactions occurred in 23 patients, three of these fairly severe. There were no general reactions.
5. Local reactions did not occur more frequently in those who had had previous antitoxin nor in those who are clinically horse-sensitive.
6. It is recommended that immunization be carried out by two injections each of 0.5 cc. tetanus toxoid or 1.0 cc. each of tetanus-diphtheria toxoid. The alum precipitated preparation is preferred, at intervals of eight weeks.
7. Immunity persists for a long time and is rapidly accelerated by an additional (stimulating) dose of toxoid.
8. Immunization should be carried out not only in children and in allergic persons, but in all those especially predisposed to injury.

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Three million dollars a month is being spent on tuberculous soldiers today. Flatly, it costs around $10,000 to induct a man suffering from tuberculosis and $50.00 a month for the rest of his life, plus compensation benefits for his dependents after his death. D. B. Craigin, M.D., Med. Dir., Aetna Life Ins. Co.

Undiagnosed tuberculosis is present in patients admitted to mental institutions in a fairly large percentage. In addition to these, a relatively large percentage of patients develop tuberculosis while in residence, again without their disease being recognized. M. Pollak, et al, Amer. Rev. of Tuber., Mar. 1941.

URINARY INFECTIONS IN CHILDHOOD

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Urological complications attending childhood infections present an interesting study for the pediatrician and the urological surgeon and it is difficult to comprehend why literature of this important subject is so meager. Pediatric urology is not a distinct speciality. On the contrary, it ranks as an important phase of general urology, and more thought and more intelligent study should be given to it. Lamentable is the situation, that as urologists we have too long considered the so-called medical kidney as a thing apart from the scope of our endeavor. It is logical to assume that in order to thoroughly and successfully attack renal disease, one should strive to secure a thorough understanding of the acute and inflammatory kidney diseases so commonly witnessed in childhood.

A complete urological survey is definitely indicated in the majority of cases of urinary infection in infancy and early childhood. These patients from conception to adult life are subject to the same pathological changes seen in later life with but few reservations. Among children, renal anomalies, renal tumors, acute infections, obstructive uropathies and a host of pathologic entities are daily recorded.

It is granted that the ordinary case of pyelitis, scarlatinal nephritis or pneumonic nephritis will terminate favorably if properly managed, however, it is still very important if the disease persists, to have a dependable understanding of any associated urological pathology which may be present.

Urinary Infections — Urinary infection results from bacterial invasion and is accompanied by a great variety of inflammatory changes. In the urine bacteria are regularly present and pus cells generally found. Not infrequently symptoms are wanting or may be extremely severe, localized in the ureogenital system, or referred to other organs or regions. Although it has been adequately demonstrated by urological investigations that urethro-vesicle infection exists without renal involvement, in most instances the predominant lesion is assumed to be in the kidney

unless otherwise designated. It is commonly known that in many instances major uropathy begins in infancy or early adult life, hence the study of urinary infections in the young is worthy of grave consideration. Especially is this true when the disease neither resolves spontaneously nor responds readily to appropriate measures. Acute urinary infection in adult life may often be a recurrence of a low grade persistant process from childhood. Pyelonephritis of one year duration invariably becomes chronic and regardless of a lack of symptoms or clinical findings, it is constantly present to a greater or lesser degree. The so-called pyelitis of pregnancy could reasonably be of this category. All have witnessed instances of young girls dismissed from the hospital after attacks of acute pyelonephritis, who on re-examination months or years later have shown pathogenic bacteria in the urine. Many of the foregoing cases were doubtless examined prior to our present day knowledge of urinary tract pathology. Regardless of our present knowledge concerning urological conditions in childhood, these observations can be repeatedly confirmed. The recognition and adequate treatment of accessory causes of persistent urinary infection in childhood is essential for proper management of these cases.

Modern urological advances and refinements in the diagnosis of advanced or chronic structural changes in pediatric cases have clearly demonstrated that with but few exceptions, children may fall heir to every urological disease known to exist in adults. Because the important problem of urologic disease in infants and children is seemingly without end, and modern knowledge concerning it so disseminate, what may appear as undue emphasis on detail of discussion is here given for clarity and to impress firmly on our minds that not a few cases diagnosed as chronic cystitis or chronic pyelonephritis or persistent pyuria are in reality cases of renal anomalies, renal tumor, renal tuberculosis or calculus disease. As a rule, correct urologic diagnosis in chronic urinary infection is not attended by major difficulties, although the therapeutic phase may be extensive. Usually acute urinary infections properly recognized are self-limited and disappear clinically in from two to four weeks, irrespective of treatment.

General Consideration of Acute Urinary Infection in Children: Non-Tuberculous — In reviewing the literature, and from our own personal experience, we note that in most instances, acute urinary infections in children are commonly classified as pyelitis. Rayer in 1837 coined the term, and at that time differentiated quite clearly between infection of the renal pelvis and of the parenchyma. He further stressed a fact which is only too frequently forgotten, that inflammation of the pelvis ultimately involves the parenchyma, and vice versa. If the literature is a criterion, comparatively slight attention was accorded Rayer's publications, until forty years later (1876) when Huttenbrenner emphasized their importance and gave an adequate clinical description of the disease. Echerich, two decades later (1895), reviewed the available data on pyelitis and pyelonephritis and stressed the high incidence of urinary infection in infants and children. The term colicystitis was used at this time, obviously considering the lesion a vesical one, possibly due to the predominance of the colon bacilli. While the foregoing citations have in a measure been substantiated by urological studies, yet it is generally conceded that infection of the renal parenchyma is the dominant lesion. Helmholz in recent years has confirmed this through extensive experimental research, as have also the pathological investigations and instrumental explorations of modern urologists.

Incidence — Acute urinary infection in childhood is most prevalent during the early years of life and due to its habit of complicating other disease processes, particularly in the naso-pharyngeal or intestinal tract, it could reasonably be considered the most frequent bacterial disease in children under two years of age. It is a well-known fact among pediatricians that most mild urinary infections go unrecognized, and only the most virulent attract clinical attention. Fromm, in a series of two hundred and twenty-five cases, reported urinary infection in 4.4 per cent under the age of two years. In no succeeding years of childhood is acute urinary disease so prevalent, and only after the fourth decade is the incidence approached.

Etiology — The etiology of urinary disease in childhood is indeed a broad and important field,

and as we know all to well, has an extensive literature. Although acute urinary diseases are directly produced by some bacterial invasion, there is a multitude of predisposing factors and accessory items of interest, namely; age, sex, heredity, seasonal causes, structural ureteral or renal changes, toxic trauma, etc., all of which have a definite bearing on diagnosis and management.

Mechanical Processes: An Important Factor in Etiology — Urinary stasis plus obstruction seems to be the most potent predisposing factor in the production and promotion of urinary infection. An unimpeded flow of urine greatly inhibits the possibility of bacterial lodgement and hence inhibits the development of urinary infection of sufficient severity to attract clinical recognition. As a corollary, the maintenance of a free renal output is the most important single factor in the management of acute or chronic urinary infection. As Von Lichtenburg so aptly expressed it, "The initial effect of urinary obstruction is urinary stasis or urinary constipation." The pathologic processes active in the presence of stasis produce various degrees of renal congestion, hyperemia or engorgement. The congestion may result from a small or scarcely demonstrable residuum. The endothelial cells of the renal capillary bed exhibit marked phagocytic activity. However, the necessary function is perceptibly lessened by urinary back pressure, and furthermore the resistance of the renal cells is diminished. With an organ so debilitated, colon bacilli or other invading organisms rush in for the kill and usually become established. It appears to be axiomatic, therefore, that urinary stasis predisposed to infection, always perpetuates an established one, and there is slight hope for cure unless urostasis is eliminated.

Stasis may result from various urogenital obstructions, neuromuscular inertia, congenital malformations, embryologic rests or renal mobility. Each should be considered in the routine of urological analysis.

Toxic Trauma — Bacterial invasion through the medium of toxemia and trauma renders the renal epithelium more susceptible to devitalization and hence a fertile area for bacterial development.

Toxic injury to the renal structure demands greater consideration than traumatic injury, not only because of its higher incidence, but because of the possibility of bilaterality. The toxemia may be local or general as often noted in furunculous dermatosis or a part of a general septicemia. The resistance of the renal cells is overcome by the toxins elaborated by the invading organisms and severe renal infection ensues. General or systemic toxemia commonly exists in acute infections, such as, typhoid, scarlet fever, diphtheria, endocarditis, pneumonia, gastro-enteritis, measles, and chemical poisoning. The pathology depends on the severity of the invasion; simple congestion when mild, and cloudy swelling when the process is severe. The clinical manifestations of the toxic effects upon the sound kidney are often prominent in advanced unilateral disease, especially pyonephrosis. Toxic injury of the otherwise healthy mate frequently causes the appearance of a heavy cloud of albumin and showers of casts. Following elimination of the toxic process, as by surgical removal, the opposite kidney generally returns to normal.

Bacteriology — The subject of bacteriology in urinary infection, while extremely important, is too often neglected by urologists. But bacteriology has a specific place in urology if treatment is to be successful, particularly as concerns the use of our newer drugs. The medical profession in general, through intensive study, has made tremendous advances in bacteriological identification, classification and cultural characterization. What was formerly a meager understanding is today a definite science and its correct application to specific disease is noteworthy. For brevity, I believe classification based on the gram stain characterization of organisms and for the diagnosis of the ordinary bacterial infection is entirely satisfactory for the average medical man.

Of the gram negative bacteria B. coli communis is most often found. In the adult it is said to cause about seventy-five per cent of urinary infections. Other gram negative bacilli which cannot be distinguished from B. coli by gram stain are Aerobacter aerogenes and Pseudomonas and Proteus genera. The gonococcus,

while being gram negative, is fortunately not very prevalent in children. The question of gonococcal infection of the kidney has been one of special interest to the urologist. A number of case reports are to be found in the literature, but considerable doubt seems to exist as to the correctness of the diagnosis in many instances. The greater significance of gonococcal infection in young children is in infection of the lower urinary tract and particularly significant in gonorrheal vaginitis.

Of the gram positive bacteria, staphylococcus is of the highest incidence, with streptococcus next. In contrast studies by various workers in an attempt to find the relative incidence of specific bacteria in renal and vesical infection, it has been quite definitely established that B. coli and staphylococci are more generally active in vesical infection; whereas, in renal disease the B. coli shows a lower incidence and there is a greatly increased incidence of staphylococcus, proteus, B. pyocyaneous and bacteria of the paratyphoid group.

It is generally understood and confirmed by personal experience, that among the various bacteria causing urinary infection in childhood, the members of the staphylococcus group are possibly as prevalent as B. coli. The relations of the staphylococcal invasion to the ultimate bacteriological picture is as yet an unsolved problem. As has been previously stated, staphylococci are predominant in vesical infection. In renal complications the staphylococcus, being usually hematogenous, is conceded by many to initiate the destructive renal process by lowering resistance and preparing the way for secondary invasion.

Assaults on the renal integrity by the streptococci have been frequently cited. However, in actual practice they are encountered infinitely less than B. coli or staphylococci. In most statistical reports the incidence is below fifteen per cent. These lesions are characteristically cortical and chiefly glomerular and are diffusely scattered microscopic or macroscopic abscess formations. These metastatic lesions are infrequently found in interstitial tissue. Many other gram positive organisms are noted, but because of their comparative rarity, need not be discussed here.

Pathways of Renal Infection — In a brief and casual consideration of the important phase of pediatric urology, all interested in urological research are thoroughly aware of the controversy still existing with regard to the pathways of renal infection. It is usually very difficult to determine the exact route of bacterial invasion of the kidney. However, in many cases it is clearly suggested by a careful analysis of the clinical history together with the symptomatology and urological findings. One should ever be on the alert in treating resistant cases of pyuria in childhood and insist on a complete cystoscopic and pyelographic study. Lower urinary tract pathology or other accessory conditions which would otherwise pass unnoticed can thereby be definitely discovered or ruled out.

The path of renal disease in infancy and early childhood is in most instances hematogenous or blood-born, secondary to the acute exanthemata, and of varying degrees of severity. The usual pathologic renal picture is one of nephritis, acute glomerular, tubular or hemorrhagic.

Nephritis of one type or another ranks high among the causes of death. Age is not an important factor and although infants are less often attacked than older children, congenital or fetal nephritis has been reported. Between ten and twenty years of age the incidence seem rather high.

Pathology of the Kidneys in the Acute Infectious Diseases of Childhood — The simple degenerative change called cloudy swelling is the most common pathologic change in the kidneys during the course of acute infectious diseases in children. It is caused directly by the circulating toxins. The microscopic picture of the swollen, granular cytoplasm of the epithelial cells of the renal tubules is too well known to deserve more than passing mention. Clinically, albumin and casts are found in the urine, but the process usually resolves completely when the infection subsides, leaving no trace of altered structure or function.

If the infection is more severe, cloudy swelling progresses to hydropic degeneration, and even to fatty degeneration of the tubular epithelium. Even such severe damage to the renal parenchyma usually resolves to normal, when the acute infection subsides. This is probably dif-

ficult to understand until it is remembered that the epithelium of the renal tubules is capable of extensive regeneration, even when badly damaged. This is true in adults as well as in children.

This is not so, however, with the glomeruli of the kidneys. When the latter are damaged we are justified in speaking of a "nephritis." In the vast majority of cases of acute infections the renal glomeruli fortunately escape injury, often in spite of severe toxemia. When such injury does develop, it does so, not as a direct result of the bacteria themselves, nor as a direct result of their toxins, but glomerular nephritis probably develops because the glomeruli become *sensitized* to the circulating toxin.

Large quantities of bacterial toxins filter through glomerular capillaries and Bowman's capsule without injurying these structures to a significant degree. In some individuals they become the site of a reactive process; and acute, subacute or chronic nephritis supervenes. No bacteria are ever found in these lesions, yet the epithelium of Bowman's capsule or the endothelium of the glomerular capillaries (or both) become much swollen and may proliferate. In recent years, since the problem of hyperergic and allergic inflammation has been studied, it has become clear that in such individuals these vulnerable structures, constantly bombarded by toxin, become sensitized to it, finally rebel and react strongly and wildly, often to their detriment.

If the reaction is chiefly exudative, then an acute nephritis supervenes. The hyperergic reaction may take the form of a marked increase in permeability of the capillaries, such as is seen in urticaria, etc., and red blood cells may actually exude through the capillary walls, resulting in hematuria. A marked swelling of the epithelium of Bowman's capsule or of the glomerular endothelium may occur, increasing from a normal thickness of less than half a micron to 8 to 10 (or more) microns, presenting a semi-permeable membrane 15 to 20 times thicker than normal. This naturally decreases filtration, resulting in oliguria. Often the two mechanisms are combined. These acute hyperergic processes usually resolve to normal in the great majority of cases, a fact often observed clinically.

If the hyperergic reaction persists, instead of a cellular proliferation, subacute or chronic nephritis supervenes. These conditions, unfortunately, often result in permanent damage to the kidneys. Proliferation of the epithelial cells of Bowman's capsule or of the capillary endothelial cells results in the formation of crescent-shaped masses of cells which fill and block Bowman's space, interfering mechanically with renal function. Filtration pressure must therefore increase, and hypertension may develop. Such cell masses do not absorb or resolve, and usually interfere permanently with the function of those glomeruli effected. As the cell masses become organized by fibrous scar tissue, the glomeruli become completely functionless. Furthermore, those individuals whose glomeruli become sensitized, may in later life have a flare-up with recurrent attacks of subacute nephritis whenever a bacterial toxin from some source filters through them. The described mechanisms probably explain the progressive, recurrent picture of chronic glomerular nephritis which follows acute infectious diseases.

If acute infectious diseases are complicated by suppurative foci, such as post-scarlatinal mastoiditis or post-pneumonic suppurative arthritis, then pyemic emboli may land in the kidneys and produce multiple cortical abscesses. Such abscesses may rupture the capsule and produce a peri-nephritic abscess, which would require surgical drainage.

Another pathologic change that is being observed recently with alarming frequency is the precipitation of sulfanilamide crystals in the renal tubules, leading to the formation of sulfanilamise stones in the pelvis. This can often be obviated by adequate therapeutic management.

Syphilitic nephritis of nurslings, renal affections in congenital lues, the kidney complications following nasal, oral and mastoid surgery offer interesting and important subjects for presentation. Although at the onset, all, from the standpoint of renal pathology, present nephritic changes, the etiology and symptomatology are vastly different and each may require quite different management.

In the foregoing, no attempt has been made to discuss specific disease entities. It is to be hoped that the problems briefly presented will consti-

tute incentives for more intelligent and thoughtful evaluation of urinary symptoms in infants and children.

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The authors wish to express their appreciation to Dr. Perry J. Melnick for his kind assistance in the preparation of this article.

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CHOKING ON FOOD CAN BE SERIOUS AND SOMETIMES FATAL

Choking on food can be serious and sometimes fatal, *Hygeia, The Health Magazine* says in answer to an inquiry. The greatest danger is that of suffocation from a large mass that may stick in the region of the vocal cords and cut off the air supply. The choking person should be placed face down and given as much breathing space as possible. Constricting collars or band about the neck should be removed and an effort made to get the patient to the hospital as quickly as possible. It is of little value for the ordinary bystander to attempt extraction of any mass with the fingers or simple instruments that may be at hand. No attempt should be made to force the person to swallow water or other liquids. If the patient survives long enough to be taken where expert attention is available, successful removal of the foreign material is usually possible, *Hygeia* declares.

THE NIGHT SECRETION OF FREE HYDROCHLORIC ACID IN THE STOMACH

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CHICAGO

The secretion of free hydrochloric acid plays an important part in the history of peptic ulcer. Much work has been done on this secretion during the day and some on the secretion of the fasting stomach, but comparatively little on the acid gastric juice during the night. This work was undertaken primarily to determine the amount of free hydrochloric acid secreted in cases of peptic ulcer after nine o'clock in the evening.

Most of the observations made in the literature have been on normal individuals. Carlson[1], in his early work on the secretion of gastric juice in man, stated that the gastric glands in the normal person were never completely quiescent, and found that when the secretion rate was low, it was poor in hydrochloric acid. Rehfus and Hawk[2] called attention to the "interdigestive phase" or the "nocturnal interdigestive phase" which resulted in the so-called twelve hour retention. They found that the stomach was physiologically active during this period, with an average free acidity among men of 18.5 in terms of 0.1 N NaOH. The free HCl values in the fasting contents of the stomach varied between 0 and 22, averaging 8.5, and the total acidity values between 8 and 40, averaging 23.4 in the report of Bell and McAdams[3]. Wright[4] recognized the gastric secretion after a night's fast and determined the average amount as 30 c.c.; the free HCl varied from 40 to 50 in terms of 0.1 N NaOH. The total acidity varied from 43 to 60.

It is interesting to note that the gastric secretion following hypnosis has been compared to that which occurs during sleep. Luckhardt and Johnston[5] carried out some experiments on hypnotized individuals and concluded that there was a rise in the gastric acidity which they thought was due to the temporary removal of central inhibition from the gastric secretory

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mechanism. Later Johnston and Washein[6] compared this work to the secretion occurring in sleep and concluded that the gastric secretion curve obtained with the empty stomach in sleep was almost identical with that obtained with the empty stomach in hypnosis. An interesting conclusion made by these authors was that the rise in acidity was generally highest when the intensity of sleep was greatest.

Emery[7] and many others have recognized the importance of night secretion in the management of peptic ulcer complicated by obstruction. Palmer[8] states: "The excessive continued night secretion appears to play an equally important role in the failure of ulcers to heal." In a series of 169 patients Winkelstein[9] found in the nocturnal secretion of normal individuals there was little or no free HC1 while patients with all types of peptic ulcer secreted a high titre of free HC1.

This study was conducted on 14 adult male patients with peptic ulcers, including duodenal, gastric and jejunal lesions. The ages varied from 23 to 69, averaging 36. The diagnosis was based on an accepted ulcer story and was confirmed by x-ray study or gastroscopy. Since it is generally accepted that the excessive night secretion of free HCl is one of the major problems in the management of peptic ulcer complicated by obstruction, no obstructive cases were studied in this series. All cases had been on ulcer management an appreciable length of time and were getting three hospital meals daily. The stomach was emptied at 9 P.M. with a stomach tube, and again at 12 midnight and 3 A.M. The secretion was titrated with 0.1 N NaOH for free HCl and total acidity immediately following the aspirations.

Ewald test meals were given in the routine manner and revealed a free HCl from 15 to 49, with an average of 27, and a total acidity varying from 30 to 48 with an average of 43 when titrated as before.

In order to evaluate the findings in the peptic ulcer cases, it seemed advisable to study the night secretion of adult males who had no history of gastro-intestinal or other complaints. Five such individuals varying in age from 21 to 27 were studied in the same manner as the ulcer cases. The aspirations were checked in every case and the variations were not of practical significance. To make the comparisons more easily understood, only the averages will be used in this report.

Seven duodenal ulcer cases were studied. The free HCl at 9 P.M. varied from 0 to 68 with an average of 26 when titrated with 0.1 N NaOH. At midnight the acidity varied from 0 to 70, averaging 45. At 3 A.M. the variation was from 18 to 60 with an average of 35. Aspiration of the normal men yielded the following values: 9 P.M., variation of free HCl from

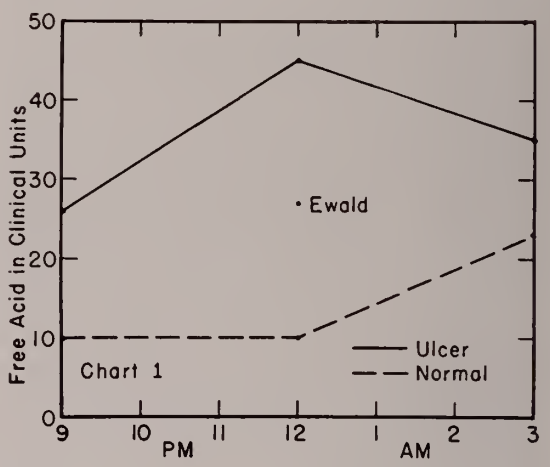


Chart 1. ———— represents the free HCl in normal cases. ————, free HCl in ulcer cases. The dot (.) indicates the average acidity of Ewald meals.

0 to 27, averaging 10; 12 midnight acidity 0 to 15, averaging 10; 3 A.M., varied from 0 to 44, with an average of 23. Chart 1 summarizes these results and compares them with the gastric acidity in the duodenal ulcer cases and that in the Ewald meals. The average acidity of the Ewald meals was 27. It will be noted that the hydrochloric acid in the duodenal ulcer cases was definitely higher than in the other two. The average quantity aspirated in the duodenal ulcer cases was 207 c.c. at 9 P.M.; 33 c.c. at 12 midnight, and 41 c.c. at 3 A.M. In the normal cases the average quantities were 152 c.c., 7 c.c. and 19 c.c. respectively. Again a definite increase is noted in the cases of duodenal ulcer.

Five gastric ulcer cases were aspirated and the free hydrochloric acid titrated as before with

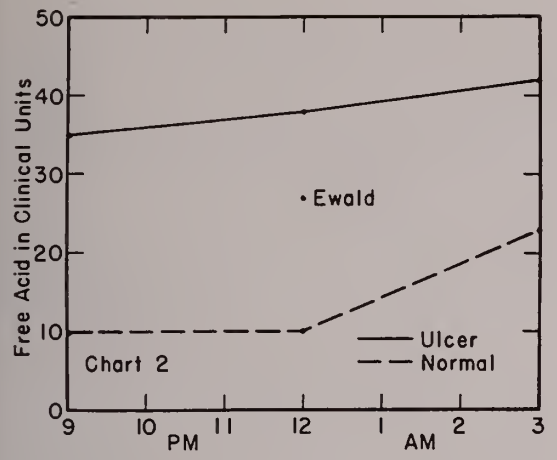


Chart 2. ———— represents the free HCl in gastric ulcer cases; — — — — the free HCl in normal individuals, and the dot (.) the average free HCl of Ewald meals.

the following results: 9 P.M., varied from 15 to 48, averaging 35; 12 midnight, 17 to 87, averaging 38; and 3 A.M. variation 23 to 58, with an average of 42. Chart 2 summarizes these results and compares them with the normal results. The average quantity aspirated in these cases varied from 96 c.c. at 9 P.M. to 16 c.c. and 15 c.c. at 12 midnight and at 3 A.M. respectively.

Two cases of gastrojejunal ulcer were studied. The gastric acidity at 9 P.M. was 0 and 36; at 12 midnight 44 and 60, and at 3 A.M. 0 and 24. These titrations are summarized and compared in Chart 3. The quantity aspirated in these cases at 9 P.M., 12 midnight, and 3 A.M. was 22 c.c., 82 c.c. and 21 c.c.

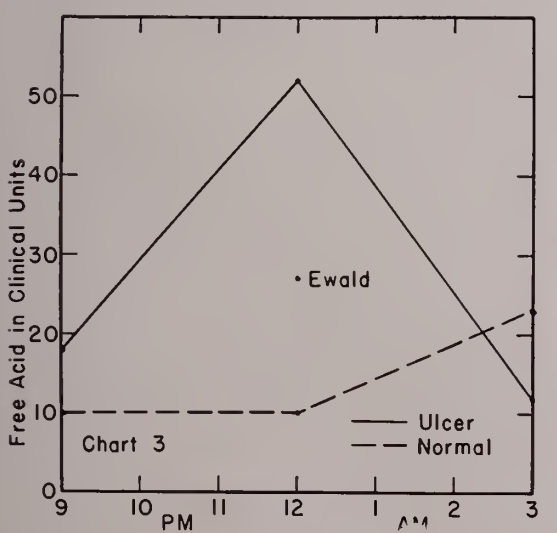


Chart 3. ———— represents the free HCl in gastrojejunal cases; — — — — average free HCl in normal cases, and the dot (.) average free HCl in Ewald meals.

A composite picture of all the ulcer cases studied in this series reveals an average free HCl of 28, 42 and 39, with a total acidity of 51, 57 and 49 at 9 P.M., 12 P.M. and 3 A.M. The average quantity aspirated was 163 c.c., 43 c.c. and 27 c.c. at the usual hours (Chart 4). The total acidity averaged 23 more than the free HCL in the gastric ulcer cases, 21 more in the duodenal ulcers and 15 more in the gastrojejunal cases with a general difference of 17.

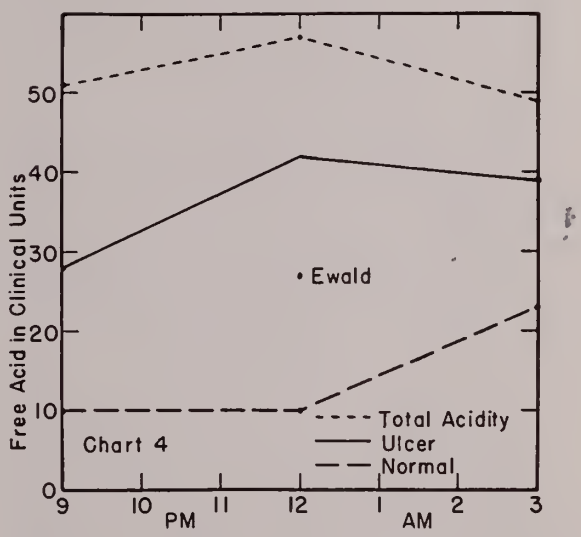


Chart 4. - - - - - - - represents the average total acidity of all cases; ———— average free HCl of all ulcer cases; — — — —, average free HCl of normal cases, and the dot (.) the average free HCl of Ewald meals.

Observation of acidity in the normal cases reveals a very definite rise at 3 A.M. which may corroborate the finding of Johnston and Washein.

It will be noted in the ulcer cases that free HCl was higher than in the normal cases during the night except in the gastrojejunal ulcers where there was an abrupt fall at 3 A.M. For many years there has been evidence that the gastric acidity plays an important part in the non-healing of peptic ulcer. It seems reasonable to believe on the basis of the findings in this series of cases that there is sufficient night secretion of acid in all cases to hinder complete healing of an ulcer. Certainly the free HCl is one of the factors that is amenable to treat-

ment. In my experience there have been better results and fewer recurrences of ulcers in the cases where the gastric acid was managed during the night, and recurrence is probably the greatest problem that confronts us in the effort to work out a more successful treatment of peptic ulcer.

The night secretion of acid gastric juice was studied in 14 cases of peptic ulcer, including duodenal, gastric and gastrojejunal lesions. The average acid secretion at 9 P.M. was 26 when titrated with 0.1 N NaOH, in the duodenal ulcer cases, 35 in the gastric, and 18 in the gastrojejunal. The average acidity values at 12 midnight were as follows: 45 in the duodenal cases, 38 in the gastric and 52 in the gastrojejunal cases. At 3 A.M. the values were 35, 42 and 12 in the duodenal, gastric and gastrojejunal lesions.

The secretion of the normal male adults at the same hours had an average acidity of 10, 15 and 23.

The free HCl was higher in the ulcer group during the night than in the normal group except at 3 A.M. in the gastrojejunal cases.

CONCLUSIONS

1. A summary of the total acidity and amount of secretion is given.

2. There was sufficient secretion of acid in the ulcer cases to hinder complete healing, and management of the acidity during the night reduced the number of recurrences and resulted in a more satisfactory treatment.

The author wishes to express his appreciation to Drs. Volini, O'Brien and Plice in whose wards this work was done.

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COMMENTS ON EARLY DIAGNOSIS AND TREATMENT OF ANTERIOR POLIOMYELITIS

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In the past several years, due to the work of the National Foundation for Infantile Paralysis and the increased activity of the State Board of Health, we have had our desks piled high with literature on this subject. A review of the articles written in the various medical journals, both in this country and abroad, shows that the members of the medical profession are not satisfied with their knowledge of the disease.

While reading an article on anterior poliomyelitis in a southern medical journal not long ago, I was impressed by ten points that the author presented for discussion. They were these:

1. "We are not sure that what we call poliomyelitis is one disease or a group of two or more diseases.

2. We do not know whether it is an ancient or a comparatively new disease.

3. We do not understand the nature of the causative factors.

4. Our knowledge of the pathogenesis is incomplete and indefinite.

5. The diagnosis of the disease as it is designated and reported is often uncertain and frequently erroneous.

6. Our knowledge of the geographical distribution in the United States and other countries, even in recent years, is incomplete.

7. We do not know the main source or sources of the disease, nor with certainty, whether the disease is infectious.

8. We do not know definitely, the usual mode of spread, the portal or portals of entry into the

Read before section on Pediatrics, Ill. State Medical Socity, May 20, 1941, Chicago.

human body nor whether it is directly or indirectly communicable from one person to another.

9. Various methods proposed for scientific treatment are of uncertain value, and

10. Many of the measures proposed and frequently adopted for prevention or control appear unreasonable, unwarranted, futile and in some instances, dangerous."

All of this is very true. It reminds me of a symposium on the common cold that I heard several years ago. It was given by some of the outstanding men of the State and when they finished telling what couldn't be done and how futile the treatment was, the general impression was that if you or your child was unfortunate enough to acquire a cold it was just too bad.

I don't believe that these men meant to sound quite that pessimistic, and certainly the outlook on poliomyelitis is not that gloomy. We have made definite progress in the past few years and have every reason to believe that the future of the treatment and control of poliomyelitis is much brighter than that indicated by the article.

Due to the increased activity of the experimental laboratories sponsored by the National Foundation for Infantile Paralysis a great deal has already been accomplished. New fields of experimentation have recently been opened by the discovery of a new experimental animal, the cotton rat. This animal is easily obtained, very cheap and more adaptable than the former medium. Before this discovery the only experimental animal we had was the monkey which is hard to get and expensive. This broadens the field considerably and should lead to some interesting conclusions in the near future.

I also feel that we have improved immeasurably in our treatment and that we are preventing paralysis in many cases by establishing special nursing and splinting technique and by encouraging early diagnosis.

In my personal experience with anterior poliomyelitis I have been impressed with the fact that no two cases are alike, that the early diagnosis is difficult and that the treatment is symptomatic.

In our community we have gone through one or two mild epidemics of meningitis in the various forms and have had sporadic cases of encephalitis. In looking back over these epidemics and following up some of the cases that recovered, there is no doubt in my mind that some cases of poliomyelitis were diagnosed as other forms of meningeal irritation and were treated as such. With a little more care and a little better knowledge these children could have had the proper treatment and paralysis might have been prevented.

While it is true that we have little to go on and the laboratory findings are not conclusive, there are a few items that we should keep in mind. One — that poliomyelitis seems to have a decided preference for the late summer and early fall, i.e. we find that epidemics occur between July and October. Two — that the age group is rather definite, between two and twelve with the greatest incidence between eight and twelve. I do not mean to say that older children or even adults do not have the disease or that younger children are immune, but for the purpose of early diagnosis these are two important facts to keep in mind. If you are called to see a sick child in this age group during this season, whether there is a nervous disturbance or not, if the illness does not fit in with the usual childhood ailments it is well to suspect infantile paralysis until it is proven to be something else.

The ordinary course of infantile paralysis consists of a perparalytic stage with fever and gradual increase of symptoms related to the central nervous system. Paralysis occurs between the third and fourth day and may become progressively worse over a period of twenty-four to forty-eight hours.

A second type is that in which there is an initial period of illness without specific neurologic symptoms, lasting from one to three days and followed by a period of apparent well being lasting from one to four days. Then there occurs a second rise in temperature and the disease progresses in the ordinary manner. Probably if a more painstaking history were secured and a more thorough examination made this type of case would have been kept in bed and a possible paralysis prevented.

The portal of entry is not positively known but from the vast amount of research work done

in recent years we are reasonably sure that it is along the course of the unmedulated nerve filaments which are found in the nasal passages and along the intestinal track.

The peculiar onset of the disease and the history of many cases substantiates the theory that there is probably an inflammatory condition in the upper respiratory track or the intestinal track or in both, sometime prior to the infection by the virus of anterior poliomyelitis.

In the history of patients afflicted with poliomyelitis we are impressed with the fact that many of the children have been in the habit of swimming in, or having otherwise been in contact with, impure water. This would seem to imply that the intestinal track is more important in this disease than was formerly supposed.

The isolation and the quarantine after the diagnosis is made is a problem that will only be solved when we discover the actual cause of the disease and the portal of entry into the body.

Until such time as the child shows early symptoms of respiratory difficulty I think that it is better to treat these children in the home, as any unnecessary movement is bad for the child. He should be kept strictly in bed and encouraged to lie as quietly as possible. With proper instruction the isolation can be carried out in the home as well as in the hospital. The cost of isolation in the hospital under the present state requirements is almost prohibitive to the average family. Early splinting of muscle groups should be done as soon as there is any evidence of pain or tremor in any group of muscles. This can be done according to the instructions which you all have on your desks sent out by the State Board of Health and the National Foundation for Infantile paralysis. Temporary splints can be applied until such time as you feel the necessity for permanent splints. These may be obtained by sending the measurements by letter or telegram to the National Foundation for Infantile Paralysis in New York City. They will be shipped at once without cost. In splinting the comfort of the patient is the first consideration.

While there has been some question as to the advisability of using convalescent serum I think that it should be given, especially if the diagnosis is made early in the course of the disease. In my own experience I have found that if the serum is given early, before paralysis develops, the prognosis is much better. While some of the cases thus treated did develop paralysis it cleared up within two weeks and the children made complete recoveries. On the other hand I have had several cases in which the serum seemed to have no effect, but in each of these cases the serum had been given after the paralytic stage of the disease.

The serum should be given with a basic dose of 60 cc. and an additional 1 cc. for every pound of body weight. If possible it should be given intravenously with the addition of normal salt solution but it may be given intramuscularly. Convalescent serum is obtainable through your local health officer or direct from the State Board of Health at Springfield.

The respirator has proven a valuable adjunct to our treatment and should be used at the first indication of difficult breathing. This is manifested by restlessness, a change in speech, and respiration. If this occurs the child should be taken to the nearest hospital as it requires someone with experience to care for a patient in a respirator. The respirator can be obtained by contacting the State Board of Health. They have an arrangement with the State Police for immediate transportation.

During several epidemics in the past years, especially the one in Canada, different forms of chemotherapy were tried out, particularly the sulfanilamide group, but nothing of value has been proved to date.

There was no appreciable difference between the control group and the experimental group. Other forms of medication have been tried but so far there is no specific drug for the disease.

With the use of the new experimental animal and the money provided for the various research laboratories, with the educational program that has been instituted in every State in the Union, with consultants in each district — I feel that there is much to encourage us, both in the early diagnosis and the treatment of anterior poliomyelitis.

DISCUSSION

Dr. A. Levinson, Chicago: Dr. Fletcher's paper touched on so many points that it is hard to discuss

them all. I therefore believe it best to limit my remarks to the diagnosis of the disease.

The reason that the diagnosis of acute anterior poliomyelitis is so difficult is because the disease goes through three different stages and in each stage one has to differentiate it from various other diseases. The systemic stage in which all the child manifests is fever, mild sore throat and some respiratory or gastro-intestinal symptoms has to be differentiated mainly from acute respiratory infections, particularly tonsillitis. It is pretty hard to make a diagnosis at this stage because the condition may simulate the onset of many other diseases.

During the preparalytic stage the most important symptoms are those referable to the nervous system. At this time the child is tender all over, has the "spine sign," frequently has a head-drop and often has a stiff neck, positive Brudzinsky, Babinski and Kernig signs. At this stage the disease must be differentiated from meningitis in all forms, particularly the tuberculous and the acute benign lymphocytic types. It must also be differentiated from encephalitis although the child in this stage is usually alert. We must also differentiate it from meningism, the acute meningeal symptom complex secondary to some other infection but without actual meningitis.

In the early paralytic stage, the child has loss of reflexes and paresis, but it is still hard to differentiate it from conditions such as neuritis or neuropathies. We may even have to consider a cord tumor. Sometimes one cannot make a diagnosis until the child is actually paralyzed or even until there is some atrophy of the muscles.

I should like to say a word about the cerebrospinal fluid in acute anterior poliomyelitis. That has always been a sore spot. Some think spinal puncture is worthless as a diagnostic measure in acute anterior poliomyelitis and others believe that you cannot make a diagnosis without it. The trouble lies in a lack of understanding of the changes in the cerebrospinal fluid in the various stages of the disease. If we keep in mind the fact that cerebrospinal fluid changes are due to changes in the meninges, we will realize that the cerebrospinal fluid varies with the stage of the disease. Thus, in the early systemic stage there may not be any changes in the fluid although the child is harboring a poliomyelitis, simply because there is no meningeal irritation. In the preparalytic stage the changes are usually definite: there is an increase in pressure and in amount of fluid; the cells are usually increased but you cannot lay down a rule as to the actual number of cells in the fluid. It is possible to get a cell count anywhere between 10 and 1000 per cu. mm. I had an experience about a year ago which illustrates this point. An excellent pediatrician saw a child with meningeal irritation. He did a spinal puncture and the fluid showed close to a thousand cells per cubic millimeter. It was because of this that he made a diagnosis of meningitis. It was not until three days afterwards, when the child had paralysis, that the diagnosis of acute anterior poliomyelitis was made. In that case the fluid was misleading.

The type of cell in the fluid at the preparalytic may also vary. Lymphocytes are the rule but polymorphonuclear leukocytes may predominate the first day and then change to lymphocytes.

The cerebrospinal fluid sugar is normal. The protein is increased, the Pandy being about one plus. Early in the paralytic stage the cerebrospinal fluid is the same as in the preparalytic stage and then gradually returns to normal.

One can easily see that the cerebrospinal fluid in acute anterior poliomyelitis is not pathognomonic, but on the other hand it is helpful in the direct and the differential diagnosis if it is properly interpreted. As in any other disease, acute anterior poliomyelitis must be diagnosed by a combination of the clinical and laboratory picture.

Dr. Arthur J. Fletcher, Danville (in closing): There is just one thing I want to say about the spinal fluid. If you do a spinal puncture and get some spinal fluid and do not depend on that to make your diagnosis of infantile paralysis, that is fine. If you think your spinal fluid is going to make the diagnosis for you, you are lost. I always want a spinal puncture in a case in which I suspect infantile paralysis in order to prove to myself that it is not something else.

DESCRIBES METHOD OF TREATING HEAD INJURIES AT PEARL HARBOR

Honolulu Surgeon Predicts Mortality Rate Of Brain Wounds In This War Will Be Far Below That of the Last One

Under the heading, "War Injuries to the Head," Ralph B. Cloward, M.D., Honolulu, discusses in *The Journal of the American Medical Association* for January 24 the procedures used in treating penetrating wounds of the head among the victims of the bombing of Hawaii on December 7.

Although much of the article concerns itself with technics of interest only to the profession, Dr. Cloward makes one statement that is not only reassuring to the public generally but one that also reveals the great progress that has been made by medicine in recent years.

He points out that "the mortality of brain wounds in the early part of the first world war was over 60 per cent. Dr. Harvey Cushing lowered this figure to 28 per cent by improving the operative technic. The mortality rate of the second world war should be far below this figure. . . ."

He explains that nearly all of the wounds

were compound depressed fractures of the skull produced by fragments of shrapnel which varied in size from thin flat pieces less than 1 cm. across to large, irregular, heavy chunks of steel 3.5 to 4 cm. wide and 0.5 to 1 cm. in thickness. There were no round smooth bullets found in the group of patients treated.

"The preliminary treatment, prior to operation, is extremely important," Dr. Cloward says. "When the wounded person is first seen at the receiving station the hair about the wound in the head is clipped widely with the hair clippers. The edges of the lacerated wounds are cleansed with soap and water. Any large bleeding vessels in the lacerated scalp are stopped with a hemostat (an apparatus for checking hemorrhage), local pressure or a piece of rubber tubing about the head. A temporary dressing is then applied after the wound has been filled with powder of one of the sulfonamide drugs. . . .

"Because of the large number of cases treated, it was necessary in many instances to delay (operation) as long as twenty-four to thirty-six hours after the injury. No infection was encountered in any of these cases in which the preliminary treatment described of cleansing the wound and applying the sulfonamide powder was employed."

He says that some interesting observations were made on the physiology of this type of wound of the head. Few of the patients with penetrating wounds of the brain were brought to the receiving station in an unconscious state. The majority of them had not been unconscious but were able to recall everything that had transpired from the time they were hit until they arrived at the hospital.

"This was a most surprising fact to the doctors who saw these cases," Dr. Cloward observes. "Patients with large gaping wounds in the frontal areas with considerable quantities of cerebral tissue oozing from the wounds were found to be conscious, cooperative, rational and able to give their identification. Most of the patients were in a state of mild shock with lowered blood pressure and pulse rates from 90 to 110. Aside from this the normal physiologic functions did not appear to be altered materially. These findings applied only to the penetrating wounds of the head. Patients whose lesions had been produced by a large object striking the head, or vice versa, carrying away large sections of brain and skull or producing extensive depressions, were obviously deeply unconscious. . . . All patients admitted in this condition died within a few minutes to twelve hours after admission to the hospital."

He says that it is his impression that the reason the patients did not lose consciousness from their injury "was the fact that the force applied to the head was concentrated in such a small area compared to the entire area of the skull that generalized acceleration of the brain was not produced. The speed with which the objects were traveling was so great that the head was struck, perforated and penetrated before the brain as a whole had time to be set into motion. . . ."

Among the important points made by Dr. Cloward in concluding his paper is that in the treatment of penetrating wounds of the head the optimum time to operate is within six hours after the injury, but wounds which have gone untreated as long as forty-eight hours should be treated as fresh wounds and closed without drains, unless there is obvious infection. All metallic foreign bodies should be removed if possible, because they lead to secondary abscess and epilepsy. Generous use of sulfanilamide not only in the scalp and skull wound but in the missile tract in the brain is recommended. "Sulfanilamide is preferred," he says, "because it has been found to be much more rapidly absorbed into the blood stream from an open wound than any of the other sulfonamide drugs."

POINT OUT THAT LEPTOSPIRAL INFECTION IS OCCUPATIONAL HAZARD

"Leptospiral infection (Weil's disease or infectious jaundice) should be considered as an occupational hazard — not as an occupational disease," W. W. Stiles, M.D., and W. A. Sawyer, M.D., Rochester, N. Y., declare in *The Journal of the American Medical Association* for January 3.

"Certain occupations expose workers to a risk of leptospiral infection that is greater than the risk run in private life. Compensation for industrial infection is therefore justified, provided nonoccupational circumstances can be ruled out as more likely sources of the infection and that

the leptospiral etiology (cause) can be established conclusively."

They explain that human leptospiral infections have been frequently associated with circumstances or occupations in which the patient has had contact with the excreta of rats or, rarely, with those of dogs. Isolated cases have been adjudged industrial accidents, and compensation has been awarded in this country and abroad. Recent investigations have shown an unsuspected incidence of the infection in certain occupations. This finding has increased the concern about the industrial liability that may be involved. The authors place particular emphasis on the warning that it is "important that workers and their employers should be informed of the potential hazard of material contaminated by rat and dog excreta and that precautions should be taken to prevent such contamination."

The two physicians say that these infections are more severe in older patients and far more common in men than in women. The mortality rate in the United States is 17 per cent in patients less than 40 years of age, 63 per cent in patients more than 40 years of age and 33 per cent in the entire group reported in this country.

They say that infection is considered to be possible through the intact skin and mucous membranes as well as through these tissue after injury. Usually it follows contact of the abraded or sodden skin with infected mud or water, but it may follow the inhalation of water or the bites of rats, dogs or ferrets. The vast majority of infections have originated from water or moist objects contaminated with infected urine. Several species of animals have been infected experimentally or found to be diseased naturally and must therefore be considered as potential sources of this infection. The urine of infected human beings has also been regarded as hazardous in the spread of the disease.

Elaborating on the occupational hazard, the two authors say that leptospiral infection may be considered as such provided the occupation exposes the patient to rats or dogs, or to moist materials contaminated by the urine of these animals, and provided that the illness follows such exposure by the recognized incubation period of from two to nineteen days.

"Certain other criteria," they advise, "should be fulfilled before a leptospiral infection is considered as compensable. A nonoccupational source of infection should be eliminated as a probability. If the patient has been swimming or wading in water that may have been contaminated by rats or dogs, it is more likely that this was the source of his infection. If the patient has had contact with a pet dog, the animal should be studied for evidence of a leptospiral infection. . . . A rat-infested residence must also be eliminated as a probable source of the infection. It is imperative to prove that the patient is suffering from a leptospiral infection and not from some other illness that may be easily confused with the leptospiral disease.

"Of the laboratory methods available for the positive diagnosis of leptospiral infections, the most conclusive is the reproduction of the disease in guinea pigs that have been injected with macerated tissue or fluids from the patient, and recovery of leptospiral organisms from these animals. . . ."

SO-CALLED ACIDITY OF HUMAN BODY IS A POPULAR FALLACY

"So-called acidity of the human body is a popular fallacy," Hygeia, The Health Magazine states in answer to an inquiry in a recent issue.

"An acid is a sour substance which has certain effects on the color of chemical test substances or indicators and which combines with alkalis to make neutral substances known as salts," Hygeia explains. "An alkali on the other hand is a bitter substance which has the opposite effect on chemical indicators and which combines with acids to make salts. Some acids and some alkalis are strong and therefore destructive while others are weak and relatively harmless. Some acids are useful, some poisonous; the same is true of alkalis.

"The human body is neutral with a strong alkali reserve. It never becomes acid except after death and its alkali reserve is reduced only in severe illness or starvation.

"There are, however, certain bodily secretions which are normally acid and which should be acid. These are the perspiration, the stomach secretions, the urine and possibly the saliva. Attempting to alkalize these normal acid secretions is foolish and useless."

Then there is the story about the wife who objected to have her husband undergo an operation because she didn't want anyone to open her male.

Clinical-Pathological Conferences

J. J. Moore, M.D., Department Editor.

The following three cases were presented at the regional meeting of members of the American College of Physicians on December 6, 1941.

The first case was presented by Dr. Carl Apfelbach from Presbyterian Hospital; the second by Dr. E. R. Strauser from Wesley Memorial Hospital; and the third by Dr. Donald Manshardt from Passavant Hospital.

These cases were discussed before the presentation of the autopsy report by Doctors James Carr, Joseph Capps and Fred Drennan but unfortunately their discussion was not recorded.

CASE 1 PRESENTED BY

CARL W. APFELBACH, M.D.,
Presbyterian Hospital
CHICAGO

G. J., white, 52 years old, entered the Hospital 1-1-41. Previous to October, 1940, he had enjoyed excellent health. At this time he contracted "flu," manifested by head-cold, pharyngitis and general malaise. This disease kept him at home for 10 days. He returned to work but did not recover previous good health.

On 12-31-40, he again became acutely ill with chills, fever, projectile vomiting, colicky epigastric pain. Several hours later, he had an attack of dyspnoea.

The important facts obtained from the past history and review of symptoms were: severe rheumatic fever in childhood; neuritis in both arms in 1940, severe in the left; and during the previous four months two or three attacks of substernal "tight feeling." On admission the temperature was 99.6°, pulse rate 99, respiratory rate 20, blood pressure 110 mm. Hg. systolic and 65 diastolic; acute hyperemia of the pharynx; a presystolic and rough systolic murmur over the entire precordium without a thrill (constantly present during hospitalization); P_2 greater than A_2; slight tenderness of the right ankle followed in a few hours by swelling and redness.

On 1-2-41, pneumococcus, type XVIII, was cultured from the throat; W.B.C. 8,200, Hb. 70%, R.B.C. 3.8 million.

Hemolytic streptococcus and staphylococcus were cultured from a catheterized urine specimen. There were only a few leukocytes in the urine. Albumin was found only on admission specimen. Subsequently, the W.B.C. rose to 20,000, granulocytes predominated in the differential counts. Malarial parasites were not identified. X-ray examinations of the abdomen, chest and ankles were negative. Kahn and Wassermann tests on the blood were negative. No amoebae were found in the stools. The gonococcal complement fixation test was negative. Agglutination tests for typhoid, para-typhoid, proteus and Brucella group were negative.

The patient was in the hospital until 2-10-41. During this period there was daily fever which at the beginning was intermittent and varied between 98 and 103. During the second week, after treatment with Sulfanilamide, Sulfathiazole and later, Sulfapyridine, the temperature was normal. After this, however, there were daily fluctuations, associated with chills, that on some occasions went as high as 106° F. with daily fluctuations down to 98 and 97.6. During the stay in the hospital the swelling of the left ankle persisted and a diagnosis of thrombophlebitis was made. Some epigastric tenderness was present during entire first month, and on two occasions there was a palpable mass in the right upper quadrant. A laparotomy was performed

on 1-31-41. A moderately distended gall bladder was found and a small amount of turbid peritoneal fluid. Cultures of this fluid and bile were negative. The spleen was never palpable during entire course of the disease. Seven blood cultures were made and all were negative except on one occasion in one plate there was a single colony of streptococcus viridans. Petechial hemorrhages were searched for, none were found.

About one day before death, the patient developed a red, macular eruption on both sides of neck and left wrist. Temperature at this time was high, the patient become stuporous. Blood culture on last day had abundant growth of pneumococcus, Type XVIII. Except for coma, no other neurological signs developed. Examination of chest during last day was negative, there were no changes in the heart tones.

AUTOPSY

Anatomic diagnosis: pneumococcal (type XVIII) pulmonic endocarditis; old deformity (congenital?) of the pulmonic cusps and pulmonary conus; small, recent, septic infarcts of the right lung; acute, pneumococcal meningitis; acute, pneumococcal, serofibrinous pericarditis; acute, serofibrinous peritonitis; ileus; dilatation of the stomach; acute bronchial aspiration of stomach content with asphyxiation; organizing thrombosis of the left femoral vein; anasarca of the right leg; unhealed laparotomy wound; slight icterus; right hydrocele.

The essential changes observed from the outside of the body were marked emaciation; slight icterus of the sclerae; bluish discoloration from engorged veins over the right malleolus; moderate swelling and edema of the left lower extremity; enlargement of the right side of the scrotum; and healed laparotomy wound.

The heart weighed 315 g. There were no chronic alterations in the mitral and aortic leaflets. Attached to the anterior pulmonic cusp there was a mass equivalent to 2 cc., consisting of red and red-brown moderately firm thrombi. The three pulmonic cusps were slightly shrunken and thickened from fibrous tissue. There was no adhesion at the adjoining margins. The pulmonary conus was slightly enlarged, the wall stiffer than normal, and there were interlacing ridges of thickened endocardium. Some of these were also observed on the left side, extending up toward the undefended space on the septum.



This photograph of the right ventricle and pulmonary artery illustrates the location of the thromboulcerative pneumococcal endocarditis, the degree of deformity of the remaining pulmonary cusps, the location of the aberrant bands of endocardium in the pulmonary conus, and a moderate degree of dilatation of the lumen and hypertrophy of the wall of the pulmonary conus.

In the right upper lobe there were three small, red, firm regions under the pleura which on surfaces made by sectioning were dry, red-brown and granular. The lungs were over-distended with air. Both lower lobes were boggy due to engorgement by blood. In the bronchial tree there was an abundance of green-brown mucus extending out into the second and third divisions. In the left femoral vein there was a brown thrombus adherent to the lining only in a few small regions, the central part containing a pale gray-brown, purulent material.

In the abdominal cavity there were a few cc. of free fluid; thin layers of fibrin on the adjoining surfaces of loops of small bowel; and dilatation of the stomach, small bowel, and colon.

In the pericardial sac the fluid was turbid.

In the superior surface of the brain on both sides there was a pale green-gray exudate in the meninges.

From the heart's blood and cerebrospinal fluid,

pneumococcus, type XVIII was obtained from postmortem cultures.

The absence of chronic inflammatory changes in the mitral and aortic cusps, the presence of aberrant thickened ridges of endocardium in the pulmonary conus and septum of the left side, together with the fact that congenital malformations are much more common in the mitral valve than in other orifices, led to the conclusion that the essential disease process was congenital anomaly of the pulmonary cusps. Acute pneumococcal endocarditis developed on the cusps. No signs of embolism were obtained during life, and none were found anatomically except for a few septic infarcts in the right lung. Histologic preparations of these infarcts demonstrate acute thrombophlebitis of the veins in the infarct. The terminal bacteremia probably arose from the infarcts rather than from the organizing thrombi on the pulmonary cusp.

CASE 2 PRESENTED BY

E. R. Strauser, M.D.
Wesley Memorial Hospital
CHICAGO

M. B., 34 years old, male, entered hospital August 27, 1941. At age 10 he was knocked from a bicycle by an automobile but suffered no noteworthy injuries. However, 2 weeks later he was put to bed by his physician for "heart trouble" where he remained for 2 years, during which time he was attended regularly by his physician and developed "rheumatic fever." At the end of 2 years he resumed normal active life. At 14 years of age he had typhoid fever. At age of 16 or 17 he developed acne which was at first limited to his face but later migrated to his back from which it has never completely disappeared. In 1934, he had sore throat which incapacitated him for three or four days. Although the patient was normally active and enjoyed good health during adult life he was refused life insurance "because of his heart condition."

Beginning in August, 1939, the patient experienced a gradual loss of pep and vitality, becoming unable to play tennis or golf and being greatly fatigued from his usual day's work. Along with this, he became irritable and nervous. Treating himself with vitamins did not improve his condition, and he then consulted a physician. Upon completion of blood tests made during the first two weeks of December, 1939, he was told that he had undulant fever. During December he was unable to work, was confined to bed with a temperature that ranged from 100° to 103°. He suffered from a sharp pain localized to a small area in the region of the right shoulder. This pain appears to have been rather continuous and required sedatives for its alleviation. During January and February, 1940, his condition improved, his temperature returned to normal and he gained 7 pounds in weight.

In December, 1940, he had several episodes of pain in the right upper chest and some visual disturbance. In January, 1941, he had chills, fever and a stabbing pain in the left upper quadrant. About 2 weeks later he developed a "node on his right index finger." At this time he was admitted to a hospital in New York City. At that time his temperature was 38.2° C., pulse 90, respiration 20, blood pressure 132/80. The patient did not appear ill. The heart was not enlarged. There was a harsh blowing systolic murmur heard over the entire precordium, loudest to the left of the sternum in the 3rd and 4th interspaces. Otherwise physical examination revealed nothing noteworthy. Blood count: R.B.C. 4.6 million; Hb., 13.5 gms.; W.B.C., 8,500 with a moderate shift to the left. Blood cultures were consistently positive for "microaerophilic nonhemolytic streptococcus." He was given large doses of sulfadiazine with a blood level as high as 27.4 mg./%. Despite this medication he continued to have positive blood cultures and ran a slightly febrile course. However, his blood count was well maintained, he did not lose weight and felt quite well. His spleen became palpable. He was discharged from the hospital on the 43rd day with instructions to take 1 gm. of sulfadiazine every four hours when awake.

On August 27, 1941, he entered a hospital in Chicago. He gave no history of edema, but he had been dyspoenic at times. Since his discharge from the hospital in New York he was confined to bed, ran a low grade fever, complained of fatigue, lost weight, and developed transient pains in the chest, shoulders and extremities. Physical examination in August, 1941, revealed an enlarged heart with a regular rhythm and with presystolic and systolic murmurs best heard at the apex. The liver was palpable and the spleen questionably so. There was tenderness

over the entire abdomen on deep palpation but no rigidity. Reflexes were exaggerated. There was dullness over the base of the left lung with reduced breath sounds and tactile fremitus over this area.

E.K.G. — 8-27-41, rate, 90; rhythm, nodal. P waves are not demonstrable. Left axis deviation. QRS complexes slurred in all leads; T waves upright in all leads. Impression: nodal rhythm. Evidence of myocardial pathology.

9-2-41, Rate, 90; rhythm, nodal. P.-R. 0.12; QRS 0.05. The most notable change since the graph of 8-27-41 is the presence of P waves.

Sulfathiazole was administered and the blood level of the drug ranged from 2.02 to 7.5 mg./%.

Temperature was irregular and ranged up to 103. Red cell counts were below 4 million most of the time in spite of transfusions. Leucocyte count ranged from 8,000 to 10,000 but tended to rise toward the end, reaching 37,650 on the day before death. Urinalysis was negative throughout. Blood chemistry: Total plasma proteins, 5.59; albumin 2.84; globulin 2.75; chlorides 478.5; inorganic phosphates 3.9.

Repeated blood cultures yielded a long chain streptococcus in dextrose brain broth but no growth at any time in blood agar plates.

The following items are from the progress notes:

9-22-41	Bilateral ankle edema.
9-23-41	Numerous petechia in the skin of both feet.
9-26-41	Edema of external genitals.
10-9-41	Blood pressure 156/50. Cyanosis of nails and lips which continued to the end.
10-10-41	Chill. Temperature 95 to 102.
10-12-41	Delirium and aphasia.
10-13-41	Petechiae on fingers, forehead and abdomen. Rales in left 3rd interspace.
10-14-41	Death.

General Description — The body is that of a well developed, white man 35 years of age. There is moderate rigor mortis and marked posterior lividity. Frontal and vertex baldness are rather marked. There is slight deviation of the nasal septum to the right. The pupils are round and measure about 7 millimeters in diameter, each. The teeth are in very good condition, only one lower left molar is absent.

Abdomen — There is about 1 centimeters of subcutaneous abdominal fat. The peritoneal cavity contains about 1½ liters, clear, light brown fluid. There are no adhesions.

Intestine — The appendix is present but is bound to the posterior peritoneum and is fibrotic. There is slight enlargement of small, mesenteric lymph nodes close to the bowel wall. There are no gross changes in the bowel wall.

Stomach — The rugi of the stomach are mostly obliterated and the mucosa has a granular appearance. There are no ulcers nor mucosal hemorrhages.

Liver — The liver weighs 1820 grams. It is very firm and of a dark red-brown color. Markings of passive congestion are very distinct on the cut surfaces. The gall bladder wall is slightly thickened and the gall bladder is filled with thick, opaque, dark brown, mucoid bile. There are no stones. The common and cystic bile ducts are patent.

Pancreas — The pancreas is of normal size and weighs 85 grams. Lobulation is distinct.

Spleen — The spleen weighs 490 grams. It is firmly adherent to the under surfaces of the diaphragm on the left lateral, parietal wall. There are numerous large infarcts, most of which are old and some of which are cystic. Recent infarcts of the spleen are few.

Adrenals — The adrenals are normal in size and consistency. Pigmentation is normal.

Kidneys — The right kidney weighs 135 grams. The capsule strips with moderate difficulty exposing a pink-tan surface in which there are a few large, deeply depressed infarcted areas. The cortex measures from 7-8 millimeters in thickness and the markings are obscure. The medullary portion of the kidney show no change. The pelvis is normal in appearance. The left kidney weighs 150 grams. The capsule also strips with moderate difficulty. The surface of the kidney has the same general appearance as the right except for more numerous, large, infarcted areas. In other respects the kidneys are exactly similar.

Urinary Bladder — The urinary bladder and ureters are normal in appearance.

Prostate — The prostate is small and symmetrical and of normal consistency.

Chest — Each pleural cavity contains about

800 c.c. of light brown, fairly clear fluid. There are adhesions at both apices, one dense band passing from the lower margin of the right upper lobe to the parietal pleura. The pleural surfaces are slightly dull but not injected.

Lungs — Several small infarcts appear within the substance of the lung. Most of these are present in the left upper lobe. The largest measures only 2 centimeters in diameter. It is light grey and softened in the center with peripheral congestion. There are no infarcts which extend to the pleura. The mucous membrane of the trachea and large bronchi is moderately injected. There is no enlargement of the peribronchial lymph nodes.

Heart — The heart weighs 395 grams. The pericardial sac contains about 200 c.c. of light, clear, straw colored fluid. The pericardial surfaces are slightly dull, especially the epicardium. The musculature of the left ventricle measures 16 millimeters and that of the right 4 millimeters. There are numerous light, tan-brown vegetations attached to the aortic valve leaflets and also to the aortic wall and endocardium on either side. These vegetations are also numerous on the ventricular surfaces of the mitral valve cusps. The largest of these measure over one centimeter in length. All of them are well organized. One flattened vegetation extends over the auricular surface of the mitral valve and over one mitral valve leaflet. Only a very small amount of friable thrombus is present on any of these vegetations. There is an opening through the interventricular septum which measures about ¾ths centimeters in diameter. This opening just below the aortic valve is mostly closed by vegetations. There is a small pea sized, very hard lymph node lying close posteriorly between the origin of the aorta and the main pulmonary artery. Circumferences of the various heart valves are as follows:

Aortic — 6.5 Centimeters
Pulmonary — 8 Centimeters
Tricuspid — 11 Centimeters
Mitral — admits the first two fingers

Esophagus — The esophagus is normal in appearance.

Anatomical Diagnosis

1. Vegetative endocarditis (Mostly of aortic valve).
2. Patent interventricular septum.



Vegetations on aortic valve. Small quill in patent interventricular septum, showing surrounding vegetations about opening through interventricular septum. Vegetations on ventricular surface of mitral valve. Mitral valve orifice.
Note: Vegetations on auricular side of mitral valve leaflets not shown.

3. Moderate enlargement of heart, especially the left ventricle.
4. Hydropericardium.
5. Bilateral hydrothorax.
6. Multiple small infarcts of lungs.
7. Infarcts of spleen and kidneys.
8. Marked passive congestion of the liver.
9. Marked baldness. (Vertex and frontal).
10. Absence of one tooth.
11. Slightly deviated nasal septum.

Microscopic

Liver — There is marked destruction of liver cords. This destruction is more marked about the central veins and intermediate portions of the lobules. Marked hemorrhage replaces the liver cells. The histological condition of the liver is that of acute passive congestion.

Pancreas — There is slight fibrosis of the pancreas. The islets are apparently normal.

Adrenals — Some of the fat tissue about the adrenals show early changes of fat necrosis.

Lungs — Small infarcts appear in the lungs. These alternate with areas of collapse. The bronchi contain considerable mucus and debris.

Heart — There is slight fibrosis of the endocardium.

Spleen — The spleen is considerably congested and contains many infarcted areas.

Kidney — Areas of fibrosis and dense round

cell infiltration appear in the cortical portions of the kidneys and are associated with fibrotic glomeruli.

CASE 3 PRESENTED BY

DONALD MANSHARDT, M.D.

Passavant Hospital

CHICAGO

Mr. F. G., white, aged 55, married, and an advertising agent by occupation, entered Hospital on April 14, 1941, with the following complaints:

On the evening of April 12th, he had a severe chill, followed by nausea and vomiting. Since that time he has experienced a dull headache, pain in the eyeballs and the back of the neck, mild aching and weakness of the extremities, and acute abdominal distention.

Past History and General: The patient, a moderately obese, middle-aged white male, states that he has been under considerable nervous strain for the past several years, that his eating habits and appetite are consistently poor, that his business required him to drink frequently, and that his chief complaint has been chronic fatigue. Previous illnesses include an attack of scarlet fever in childhood, followed by "rheumatism," gonorrhea with orchitis, 36 years before entry, and seven hospital admissions during 1930, when he was treated for diverticulitis and duodenal ulcer confirmed by X-ray examination. He is married, his sex life is normal, but he has had no children. He complains of sore throat and hoarseness for a week before admission.

Physical Examination reveals the following: The pharynx was injected and there was some soreness of the larynx on pressure. A few fine rales were present medial to the right scapula and in both lung bases. The pupils were sluggish and lacrymation was excessive. The patient groaned as he breathed and yawned frequently. A marked right scoliosis was present, with thoracic deformity. There was a generalized abdominal distention and pain on pressure in the left lower quadrant, midway between the umbilicus and Poupart's ligament.

The blood pressure was 94/66, pulse 80, temperature 101°. Urinalysis on admission showed a reaction of pH 5.5, specific gravity, 1.015, albumin++, occasional RBC and 4-8 leucocytes /HPF, 4+ epithelial cells and a few facteria. Erythrocytes were 6,030,000, Hb 15 grams. Leucocytes 11,400 with 81% polymorphs, 25% of which were non-filamented forms.

On April 15th, the patient developed a chill and his temperature rose to 104.4°. This was followed by nausea and vomiting, after which the temperature came down rapidly. Defense reaction developed over the right upper quadrant. A stool examination at this time was negative. An examination of the gastric content was positive for blood by the Guaiac test. X-ray examination of the stomach on April 15, showed an increase in the rugal folds, suggesting a prepyloric ulcer. Two series of electrocardiograms were essentially normal.

On April 16th, some tenderness of the epigastrium and left lower quadrant were noted. Blood pressure was 60/54 at this time. The leucocytes rose to 25,500 with 55% polymorphs, 22% of which were non-filamented. Gastric contents showed 2+ blood by the Guaiac test. Blood sugar was 122.5 mgms., cholesterol 210 mgm.

The phenolsulfonphthalein test was as follows:

Time	*Spec.*	*% Dye*	*Total*
15 min.	50 cc.	25%	25%
1 hour	25 cc.	30%	55%
2 hours	40 cc.	10%	65%

On April 17th, the patient showed a very slight icteric tint to the sclerae and the liver was enlarged two fingers below the costal margin. X-ray examination at this time was essentially negative with regard to gas or fluid under the diaphragm.

An exploratory operation was performed on the 17th and following findings were reported. A small thickened area in the duodenum about 3 cm. distal to the pylorus was palpated. This had no reaction about it. There was no evidence of fat necrosis. The stomach and spleen were normal; the gall bladder was not palpated. The ascending and descending colon contained many small, palpable diverticuli. The small intestine seemed normal and no thrombi were palpable in the mesentery. The surgeon reported that "nothing in the peritoneum accounts for the acute picture of shock and sepsis."

On April 18th, the patient developed a chill with a fever rising to 105°, after which the temperature gradually fell, returning to normal in five days and rising terminally. Singultus set

in, a Levine tube was passed and coffee ground material, later bile-stained fluid was obtained from the stomach. The blood pressure rose to 104/68 and remained at this level for the next three days. 1000 cc. of 5% glucose in normal saline were given every six hours from this time until death. The jaundice continued to increase and on the 19th the icterus index was found to be 75 units. The leucocyte count at this time rose to 16,550 with 95% polymorphs, 36% of which were nonfilamented. The gastric contents continued to be positive for blood. Urinalysis showed a reaction of pH 6, albumin 4+, positive bile, occasional hyaline, and 40-80 granular casts/LPF, 10-20 erythrocytes and 10-40 leucocytes/HPF.

On the 21st there was evidence of suppression of urine and edema. At this time the urea nitrogen was 108 mgm., blood chlorides 485 mgm. and the icterus index 115 units. A serosanguinous discharge developed in the wound and the jaundice increased.

On April 25th, a uremic frost appeared, the patient failed rapidly and expired.

Autopsy Findings — The body is that of a well developed, moderately obese white male, 5 feet, 6 inches in length, weighing 166 pounds. The skin and sclerae were deeply icteric. Numerous petechial hemorrhages were present over the posterior surfaces of both thighs, and the origin of the right deltoid muscle. No lymphadenopathy or pitting edema was present. There was a marked scoliosis of the spine, with convexity to the right.

The *thyroid* gland weighed 20 grams and was not remarkable.

The *heart* weighed 430 grams. Except for a large amount of subepicardial fat and subepicardial hemorrhage over the right atrium, there were no noteworthy changes. The valves were competent, and of normal measurement, and the coronary arteries were patent.

The *aorta* contained a few atheromatous plaques.

Both *lungs* showed moderate edema at their bases, and the lower lobe of the right lung was atelectatic.

The *stomach* contained a considerable quantity of black blood. Hemorrhagic petechiae were generalized in the mucosa. The rugal folds of the pre-pyloric region were unusually prominent, but no ulceration was found.

The *small intestines* were not remarkable, except for the presence of a considerable amount of black blood in their lumina.

The *spleen* weighed 230 grams, presenting the gross and microscopic picture of acute septic splenitis.

The *pancreas* showed only extensive fatty infiltration.

Numerous small, true diverticula were present in the *sigmoid colon*. Most of these measured from one to two mm. in diameter. A larger diverticulum, measuring 1 cm. in diameter lay at the mesenteric side of the rectosigmoid junction. In an area six cm. in diameter about this diverticulum, several black, polypoid, elongate, submucosal masses were evident, having the appearance of thrombosed veins. There was considerable infiltration about the diverticulum, and a small abscess, 1 cm. in diameter was present nearby. In this region, the branches of the portal vein were distended with gray-green pus which extended into the substance of the liver.

The *liver* weighed 2540 grams. The surface was orange-brown in color, with dark gray-green irregular markings, in which numerous small elevated yellow abscesses were evident, measuring up to 2 mm. in diameter. On cut section the distribution of the abscesses were found to be most numerous about the larger portal radicles which were filled with pus. Microscopic sections revealed little involvement of the hepatic arteries and bile ducts, with extensive necrosis of liver cords apart from the abscessed areas. Many liver cords in some areas were fragmented and disrupted. The *gall bladder* was the site of a moderate chronic cholecystitis.

The right *kidney* weighed 140 grams, the left 150 grams. Each showed, microscopically, advanced tubular changes. Some of the tubular cells were crowded into the capsular spaces. Considerable albumin and a few erythrocytes were present in the tubular and capsular spaces. In addition to the more acute degenerative changes, areas of chronic inflammatory exudate were present in the kidney pelvis and medulla.

Examination of the *spine* disclosed a marked osteoporosis in the vertebral bodies in the lumbar region.

The *testicles* were moderately fibrotic and

atrophic, showing a complete absence of spermatogenesis.

In the bellies of both *psoas muscles* were found massive hemorrhages, without microscopic evidence of infection.

Cultures from the portal system were positive for staphylococci and B. Coli Communis.

Permission was not granted for examination of the cranial cavity. Other findings were not contributory.

The *anatomical diagnoses* include the following:

1. Multiple diverticula of rectosigmoid colon, with acute diverticulitis of one.
2. Acute suppurative pylephlebitis.
3. Multiple liver abscesses of portal origin, containing staphylococci and B. Coli Communis.
4. Marked jaundice.
5. Acute septic splenitis.
6. Mild chronic pyelonephritis.
7. Chronic cholecystitis.
8. Massive hemorrhages into psoas muscles, bilaterally.
9. Numerous petechial hemorrhages of skin, stomach mucosa and visceral pericardium.
10. Mild atheromatosis of aorta.
11. Testicular fibrosis and atrophy.
12. Fatty infiltration of heart.
13. Marked right scoliosis, with osteoporosis of lumbar vertebrae.
14. Recent right paramedian incision, sutured.

COMMENT

The pathological urinary findings on admission were evidently the result of a mild chronic pyelonephritis. The terminal suppression of urine, occurring nine days after the first acute symptoms is accounted for by the marked tubular degeneration in the kidneys, and was evidently a result of the hepato-renal syndrome.

The osteoporosis of the spine was of long standing, and the etiology was not evident. The widespread petechial hemorrhages and hemorrhage into the psoas muscles may have been initiated by a nutritional deficiency, especially a lack of vitamins C and K.

The marked parenchymal fragmentation and disorganization in sections of the liver and of interest. These changes were noted by Stewart and Lieber frequently in livers following surgical decompression of liver abscesses and rather rarely in other diseases of the liver. (Arch. Path. 18:30-41. 1934).

THE HAWAII MEDICAL SERVICE PLAN

On May 31, 1941, the Hawaii Medical Service Association ended its third year of operation and its first year under its agreement with the Honolulu County Medical Society.

The 33-⅓% deducted from all doctors' bills and held in the Physicians Reserve Fund is fully in tact and amounts to $6,148.89. During the coming year the Association will deduct only 20% instead of 33-⅓% from all doctors' bills and this will also be placed in the Physicians Reserve. It is hoped that at the end of the year the full fee schedule rates, without any discounts, will be paid on all bills.

As many of you will recall, the Association began three years ago with 600 members. Today we have approximately 5,000. This is directly due to extension of the plan to include industrials and the low salary employee. In the past year industrial firms have shown an increasing interest in the plan for their employees, and we have at this time 121 firms insured. Many of the employees insured are earning less than $75.00 per month.

Dr. Fred Irwin, retired, has been with the Association for the past year as medical director and has been doing an excellent piece of work. Dr. Irwin is available at the Association offices each weekday between 10 and 12 a.m. and we urge you to call him whenever you are in doubt as to the procedure in any case.

Medical insurance plans operated by state medical societies or by county societies are gaining interests on the mainland. There are several such plans now in full operation — in New York City, Michigan, California and Oregon. The Hawaii Medical Service Association keeps in contact with these and we feel that our three years' experience has given us quite a jump on these other plans. None of them are exactly alike, there is great variation as to benefits and other details, but essentially they are all endeavoring to serve the same fundamental purposes.—*Hawaii Medical Journal — Nov., 1941.*

Dr. Wilfred Pickles, of Providence, tells us in the *R. I. Medical Journal* for October: In August, 1840, workmen repairing the chancel of St. Peter's Mancroft accidentally broke open a coffin which proved to be that of Sir Thomas Browne. After a careful examination of the remains by an archaeologist, the skull was removed by one of the workmen and later found a resting place in the museum of the Norfolk and Norwich Infirmary. Here it was exhibited together with these lines from Sir Thomas's *Hydriotaphia* — "To be knaved out of our graves, to have our skulls made drinking bowls, and our bones turned into pipes are tragical abominations escaped in burning burials."

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

Clarence B. Ripley of Galesburg has been elected one of the nine Trustees of the Interstate Post-Graduate Medical Association.

E. K. Steinkopff, University of Illinois College of Medicine 1929, has been appointed by Dr. Roland R. Cross as Medical Tuberculosis Control Officer and Chief of the Division of Tuberculosis Control for the state of Illinois. He will take office about the first of February, 1942.

N. C. Barwasser of Moline addressed the dermatology section of the Southern Medical Association at St. Louis November 11th on the subject of The Treatment of Keratosis Folliculosis (Darier) with Massive Doses of Vitamin A.

The Douglas County Medical Society has launched a program whereby every child in the schools of Douglas County and every pre-school child may be immunized against diphtheria. The two injections of toxoid necessary for total immunization against diphtheria will be given for a charge of one dollar for each child, providing the child is brought to the office of his family physician between the dates of January 20, 1942 and February 28, 1942.

The Educational Committee and the Illinois State Medical Society participated in the Annual Summer Round-Up Conference of the Illinois Congress of Parents and Teachers at the Stevens Hotel, Chicago, January 20.

The VICTOR NEWS for January 1942 carries an article "Medical Profession Called Leader in 1941 Advancement" quoting from the SCIENCE SERVICE, world-wide scientific news-gathering organization. SCIENCE SERVICE has declared the field of medicine to be a leader in building up an impressive list of notable achievements during the twelve-month period. Among the advances included in the review are: "enriched" white flour, the photographing of Influenza A virus, sulfadiazine spray treatment of burns, possibility that infantile paralysis may be spread by flies, and many others.

The office of the Educational Committee has mailed copies of the papers presented at the Post-Graduate Conferences held during the fall of 1941 to all doctors subscribing for them. Doctors who paid for the entire series will receive copies of the Conferences being planned for the spring of 1942.

The Educational Committee is receiving many requests from lay organizations for programs on "Medicine and Defense." During the month of January talks on that subject were given by Doctors Charles H. Phifer, H. Prather Saunders, George K. Fenn, Harold M. Camp.

COMING MEETINGS

February 3 — Vermilion County Medical Society — 6:00 Wolford Hotel, Danville — Willard O. Thompson, M. D., "Clinical Application of Sex Hormones."

February 3 — Bureau County Medical Society — 6:00 St. Margaret's Hospital, Spring Valley — Charles Galloway, M. D., "Prevention of Toxemias of Pregnancy" and Edward Allen, M. D., "Obstetric Hemorrhage."

February 5 — Perry County Medical Society — 6:30 Elks Country Club Tamaroa — H. L. Joslyn, M. D., "Medical Management of Diseases of the Stomach" and Dean Sauers, M. D., "Surgical Management of Diseases of the Stomach."

February 10 — Effingham County Medical Society — 6:30 Benwood Hotel, Effingham — Angelo S. Geraci, M. D. — "Heart Disease."

February 11 — McDonough County Medical Society — 6:00 P. M., Macomb — Fred M. Meixner, M. D., "Aviation Medicine" and a paper on "Eye."

February 12 — Union County Medical Society — 6:00 P. M., Anna — H. I. Stevens, M. D. — "Fractures of the Pelvis."

February 13 — Jersey-Greene County Medical Society — 6:30 residence of Dr. H. R. Gledhill, Jerseyville — Edward W. Cannady, M. D., "Disorders of the Gastro-Intestinal Tract."

February 17 — Knox County Medical Society — 6:30 Galesburg Club, Galesburg — W. B. Raycraft, M. D., "Pneumonia in Infancy and Childhood" and R. E. Lee, M. D., "The Ambulatory Treatment of Varicosities and Associated Pathology."

February 26 — Henry County Medical Society — 6:30 Kewanee — George J. Musgrave, M. D. — "Why The Public Fears Sinus Disease and the Present Method of Treatment." One other speaker.

March 3 — Bureau County Medical Society — 6:30 Princeton — Clayton J. Lundy, "Management of Heart Disease in Pregnancy."

March 10 — Bureau County Medical Society — 6:30 Spring Valley, St. Margaret's Hospital — Lindon Seed, M. D. — "Goiter."

March 17 — Knox County Medical Society — 6:30 Galesburg Club, Galesburg — H. C. Hesseltine, "Vitamins in Obstetrics and Gynecology" and C. H. Galloway, "Anesthetics in Obstetrics."

Every Friday noon — Will-Grundy County Medical Society — 12:00 o'clock Luncheon at the Louis Joliet Hotel, Joliet.

MARRIAGES

Louis D. Boshes, Chicago to Rhea Amber, Chicago, on January 4, 1942.

Clarence Vernard Hodges, Chicago, to Miss Nelle Mae McAfee of Flossmore, Ill., recently.

DEATHS

Charles Davison, Chicago; Northwestern University Medical School, Professor Emeritus of Surgery at the University of Illinois College of Medicine. In 1926 he retired as head of the department of surgery at the University of Illinois College of Medicine after 26 years of service. In the same year he also ended 37 years' service on the staff of the County Hospital, where he had been chief surgeon and president of the medical staff. He died January 19, 1942 at the age of 84.

John Garfield Frost, Chicago; Northwestern University Medical School, 1907; professor of surgery in Loyola University School of Medicine and attending surgeon in the County Hospital. He was chief surgeon for the Chicago & Eastern Illinois Railroad, the Chicago & Western Indiana Railroad and the Belt Railway Company. Died January 2, 1942, aged 59.

Harris Ainsworth Jacobson, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; physician for the draft board; aged 54; died, Dec. 22, 1941.

Leslie Frederick MacDiarmid, Chicago; University of Illinois College of Medicine, 1909; he was on staffs of the Garfield and University Hospitals. Died January 20, 1942, aged 57 years.

William A. McKee, Chicago; University of Toronto Faculty of Medicine, 1926. Died January 3, 1942, aged 43.

Anthony Augustus O'Neill, Chicago; Kansas City Medical College, 1890. Died January 4, 1942, aged 83 years.

Thomas William Plant, Chicago; Loyola University Medical School, 1916. Senior Surgical staff of St. Mary's Hospital. Died December 29, 1941, as result of automobile accident, age, 55.

William Rhinehart Schick, Chicago; University of Illinois College of Medicine, Chicago, 1940; first lieutenant in the medical reserve corps of the United States Army; aged 31; was killed, Dec. 7, 1941, in action during the Japanese raid on Pearl Harbor.

Charles Edward Sceleth, Chicago; Rush Medical College, 1896. Served as a captain in the army medical corps in the World War. He was medical superintendent of the Bridewell Hospital for 33 years and attained national prominence for his research in nervous diseases, alcoholism and drug addiction. Died January 19, 1942, at the age of 68 years.

George deTarnowsky, Chicago; Northwestern University Medical School, 1900; professor of surgery at the University of Illinois College of Medicine. In the World War, he served as a colonel in command of the 378th medical regiment and won 22 decorations including the Distinguished Service medal. He was co-founder of the Ravenswood Hospital and former president of the Chicago Surgical Society and the Chicago Gynecological Society. Died January 20, 1942, aged 68.

Arthur M. Bishop, Good Hope, Ill.; Northwestern University Medical School, 1898; retired. Died January 11, 1942 as the result of an automobile accident; age, 70.

Robert E. Bley, Bunker Hill, Ill.; Jefferson Medical College of Philadelphia, 1910. Died January 18, 1942, aged 55.

George Wing Dryer, Moline, Ill.; Harvard Medical School, 1931. He was battalion surgeon for the 2nd battalion of 123rd field artillery, Illinois National Guard. Died January 12, 1942, after an 18 months' illness, at the age of 37 years.

Jacob G. Fisher, Danville, Ill.; Rush Medical College, 1901. Member of the staffs of the Danville Hospitals. Died December 24, 1941, age, 66 years.

Otis P. Hamilton, Forrest, Ill.; Illinois Medical College, 1907. In the World War he was a First Lieutenant at Camp Meade. In 1939-40, he was president of the Livingston County Medical Society. Died January 19, 1942, aged 59.

Joseph Franklin Hall, Kirkwood, Ill.; Hospital College of Medicine, Louisville, 1907. Died January 5, 1942, aged 62.

Columbus Huffaker, Chrisman, Ill.; Kentucky School of Medicine, 1905. Member of the Wabash Valley Aesculapian Society. Died January 11, 1942, age, 69.

Charles W. Hull, Farmer City, Ill.; Dearborn Medical College, 1906. He had been in practice for 36 years, 11 in Chicago and 2 in Mansfield before moving to Farmer City. Died January 9, 1942, age, 73.

Charles W. Johnson, McLeansboro, Ill.; Barnes Medical College, 1899. Died December 23, 1942, aged 29.

Cyrus S. Keagy, Mill Shoals, Ill.; Missouri Medical College, St. Louis, 1889; aged 78; died, Nov. 19, 1941.

Russell Burton Main, Norris City, Ill.; George Washington University School of Medicine, 1900. Member of Indian Creek Legion Post 109 and a Veteran of the Foreign Wars Chapter. He was an ordained Presbyterian minister. Died December 23, 1941, aged 65.

Francis Marion Thurman, Pearl, Ill.; Barnes Medical College, St. Louis, 1904. Died January 14, 1942, aged 70.

Lee Otis Vickery, Lena, Ill.; Loyola University School of Medicine, 1919. Died January 10, 1942, aged 54.

George T. Weber, Olney, Ill.; Missouri Medical College, 1894. Died December 26, 1941, aged 71.

William A. Phelps, Thebes, Ill.; Kentucky School of Medicine, Louisville, 1884; member of the Illinois State Medical Society; aged 86; died, Dec. 7, 1941, of cerebral arteriosclerosis and carcinoma of the face.

Roy Thomas Rodaway, Roanoke, Ill.; Bennett Medical College, Chicago, 1913; member of the Illinois State Medical Society; past president of the Woodford County Medical Society; on the staff of St. Francis Hospital, Peoria; served during the World War; county coroner; aged 54; died, Nov. 4, 1941, at his summer home in South Haven, Mich., of coronary disease.

A tuberculosis service is one which illustrates very clearly the emotional meaning of illness. If the diagnosis serves as an escape, the patient may accept a recommendation for sanatorium care very willingly. Since that is what may be most needed the accomplishment of this first step is usually considered helpful. Yet, if the motivating force of the patient's desire to get well is lacking, it may be difficult to arouse, and the benefits of sanatorium care may be less effective until this occurs. If the diagnosis means essentially a frustration, an interference with plans, the patient may react in many different ways. He may, and the big majority do, accept his problem and meet it to the best of his ability. Or, he may be very resentful, blaming his employer, his parents, his wife, the Diety, and society in general. Life has hurt him and he must hurt back. Or he may react by denying the existence of any trouble. He may say and believe that he feels better, that he can do more things, that his activities are increasing The function of the nurse (and the doctor) is to interpret the health needs and to help the patient consider them. Dorothy I. Roberts, R.N., Pub. Health Nursing, Dec., 1941.

Tuberculosis among the interne group in hospitals is important enough to receive particular consideration. At best, to have tuberculosis is a time-consuming, unpleasant experience for any young person to contend with. Increasing numbers of medical schools are beginning to approach this problem by the periodic examination of their student body. Hospitals, in contrast, are backward. Reginald Fitz, M.D., Jour. of Amer. Med. Assn., Sept., 1941.

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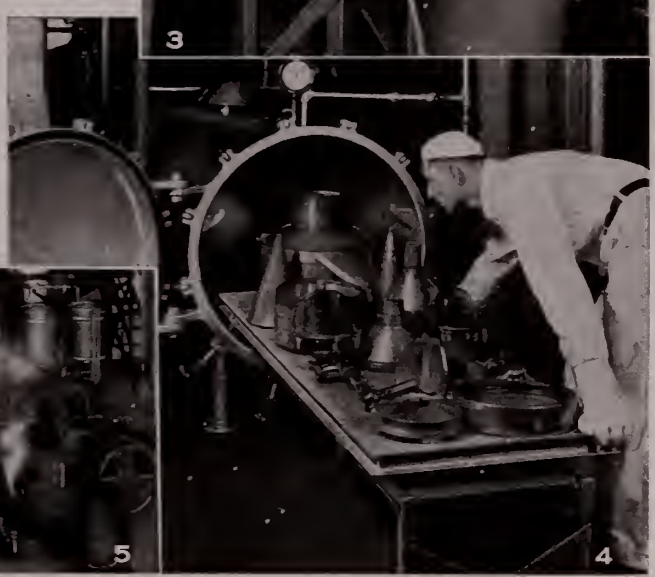
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Book Reviews

THE ESSENTIALS OF OCCUPATIONAL DISEASES. By Jewett V. Reed, B.S., M.D., F.A.C.S. and A. K. Harcourt, B.S., M.D., Indianapolis, Indiana. Published by Charles C. Thomas, Springfield, Illinois and Baltimore, Maryland. Price $4.50.

For the past thirty years these men have engaged in the practice of industrial medicine and surgery in Indianapolis. Their book contains a concise and well documented work based on knowledge acquired during these years. It treats of all occupational diseases on record, and considers each as to its occurrence, symptoms, diagnosis and treatment.

In addition to physicians and health officers, this book can be recommended to liability insurance executives, and to industrial and labor groups.

DISEASES OF WOMEN. (9th edition.) By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine, and Robert James Crossen, A.B., M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine. St. Louis: C. V. Mosby Co. 1941. Price $12.50.

The first edition of this work appeared in 1907, and with each new addition through the years, new subjects have been added, new therapy provided the reader, and important material further elucidated. As in former editions, the arrangement of the text has been made clear and systematic. The volume contains a wealth of photographic material and many drawings and charts. There are many color plates of interest and value.

This volume contains many of the recent procedures described in detail. As a reference book for the general practitioner and a text for the medical student this book can be highly recommended. It should have a prominent place in the gynecologist's library among important texts and reference books.

SYNOPSIS OF DISEASES OF THE HEART AND ARTERIES. By George R. Herrmann, M.S., M.D., Ph.D., F.A.C.P., Professor of Medicine, University of Texas, Director of the Cardiovascular Service, John Sealy Hospital, Consultant in Vascular Diseases, U. S. Marine Hospital. Second edition, completely revised and reset, 91 illustrations with some in colors. 468 pages. The C. V. Mosby Company, St. Louis, 1941. Price $5.00.

This volume has been compiled for the benefit of the medical student and the busy physician in general practice who has not too much time available for the tremendous amount of literature on diseases of the heart appearing in medical print today.

Especially notable at this time is a new chapter on the methods advocated by military authorities for use in examination of recruits for the detection of any cardiovascular difficulty. This chapter can be especially recommended for the study of all examiners on our many draft boards, and those doing any form of military medicine at the present time.

The book is a small one and easily carried around. It is fundamentally a synopsis and makes no effort at exhaustive discussions, but presents the author's personal experiences in this field, giving the present-day concept and treatment of diseases of the heart and arteries.

STANDARD BODYPARTS ADJUSTMENT GUIDE. Published by the Insurance Statistical Service of North America, 542 Rush Street, Chicago, Illinois, 1941. Second edition. Price $15.00.

The revision of a very practical book is larger and much more comprehensive than it was in the first edition. However, the material has lost none of its conciseness, and is well to the point and accessible. Each division of the book has been brought up to date, and the provision of a ten years' revision service gives the owner a promise of a continuance of

information upon matters subject to change through legislative, judicial or medical progress.

Employers, actuaries, claim adjusters and men in industrial medicine and surgery will find in this publication, information vital to their interest in these various problems.

YEARBOOK OF PUBLIC HEALTH, 1941. Edited by J. C. Geiger, M.D., Dr. P. H., Director of Public Health, City and County of San Francisco; Clinical Professor of Epidemiology, University of California; Clinical Professor of Preventive Medicine and Public Health, Stanford University School of Medicine; Lecturer in Preventive Medicine and Public Health, University of Southern California Medical School. The Year Book Publishers, Inc., Chicago. Price $3.00.

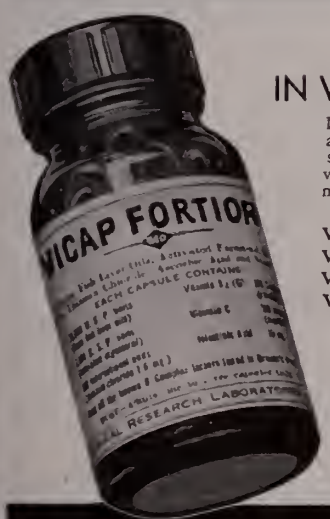
THE YEARBOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY, 1941. Edited by Charles F. Painter, M.D., Orthopedic Surgeon to the Massachusetts Women's Hospital and Beth Israel Hospital, Boston. The Year Book Publishers, Inc., Chicago. Price $3.00.

THE YEARBOOK OF PATHOLOGY AND IMMUNOLOGY, 1941. Edited by Howard T. Karsner, M.D., Professor of Pathology, Director of the Institute of Pathology, Western Reserve University, Cleveland, and Sanford B. Hooker, A.M., M.D., Professor of Immunology, Boston University School of Medicine; Member Evans Memorial for Clinical Research and Preventive Medicine; Immunologist, Massachusetts Memorial Hospitals. The Year Book Publishers, Inc., Chicago. Price $3.00.

As in previous years these most interesting Year Books contain much information pertaining to the developments of the past year in their respective fields. With the hundreds of medical journals and new books published each year, it is impossible for any physician to keep himself informed on all of the latest advances in every field of medicine.

The 1941 Year Book of Public Health contains within its approximately 550 pages much that is new and of interest to members of the medical profession. In addition to the old subjects pertaining to communicable diseases and epidemiology, additional information is given in detail on dental hygiene, health education, food and nutrition, hospital hygiene, maternal care, mental hygiene and a number of

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other highly important subjects. Then the section dealing with military hygiene should be of much importance at this time. The relationship of civilian health to army efficiency is a subject receiving a considerable amount of attention now, and is well discussed in this work.

The 1941 Year Book of Industrial and Orthopedic Surgery is entirely new and is well illustrated with 253 cuts all of which are new. Like many branches of medicine, there have been many advances in the field of orthopedic surgery during the past year, more notably along the line of treatment of osteomyelitis, care of fractures and treatment of deformities, all of these being well discussed in this handy volume.

Industrial Surgery with the ever increasing number of workers in many industrial plants has been given a greater consideration in recent years than ever before, and at this time, industrial hygiene is being given much consideration. There is indeed a wealth of information along these lines in this book.

The 1941 Year Book of Pathology and Immunology with about 625 pages, is equally divided with discussions of the two subjects, either of which would fill the ordinary volume. Each year as these interesting volumes are brought out the field is enlarged until at this time the human body is indeed well covered. In addition to the many types of tumors which are ordinarily reviewed in a book on pathology, a considerable amount of space is taken over by discussions of pathology of the cardio-vascular system, hematopoetic system, male and female genitalia, endocrine system, and the nervous system.

In the sections on Immunology the many considerations of immunity to bacterial diseases are thoroughly discussed, then such subjects as Chemotherapy, Anaphylaxis and Allergy, Blood Groups and Immunochemistry are outlined.

It is the opinion of the reviewer that much literature of the past year has been studied by the authors in their endeavor to give the reader the cream of the lot, and also that these volumes will be of interest to physicians who endeavor to keep up to date on their reading in a desire to keep abreast of the times.

THE DOCTORS MAYO. By Helen B. Clapesattle. The University of Minnesota Press, Minneapolis, Minnesota. Price $3.75.

The story of the three Mayos is well revealed in this book which is written in a most fascinating manner. The story of the elder member of the trio, William W. Mayo, is highly interesting. He was born in England, coming to the United States in 1845 at the age of 25. We have the story of his interests in medicine, then after a residence in Indiana, his arrival in Minnesota in 1854.

The experiences of the elder Mayo in his early years of practice are presented in much detail, and his remarkable ability to do the most modern surgery of that time. Then we see the training of Doctors Will and Charles and the desire of their father to see the type of "team work" develop which has made the Mayo Clinic famous.

The work of Dr. Will and Dr. Charlie, known to every present day physician, and the close companionship throughout their lives, is well brought out in the book. Together throughout their lives, it is most interesting to recall that their deaths in 1939 occurred within a period of two months.

The book is well written, contains much information concerning the lives of "the three Mayos" and should be of interest to many readers.

Books Received

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

THE BLOOD BANK and the Technique and Therapeutics of Transfusions. By Robert A. Kilduffe, A.B., A.M., F.A.S.C.P., and Michael DeBakey, B.S., M.D., M.S., F.A.C.S. The C. V. Mosby Company, St. Louis, Mo. Price $7.50.

NEUROANATOMY. By Fred A. Mettler, A.M., M.D., Ph.D. Professor of Anatomy, University of Georgia School of Medicine, Augusta, Georgia. The C. V. Mosby Company, St. Louis, Mo. Price $7.50.

ENCEPHALITIS. A Clinical Study. By Josephine B. Neal, A.B., M.D., Sc.D., F.A.C.P. Clinical Professor of Neurology, College of Physicians

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IN
Otitis Media
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and Surgeons, Columbia University, and Collaborators. With Foreword by Hubert S. Howe, A.M., M.D. Grune & Stratton, New York.

A Primer on the Prevention of Deformity in Childhood. By Richard Beverly Raney, B.A., M.D., Associate in Orthopaedic Surgery, Duke University School of Medicine, Durham, N. C., Attending Orthopaedic Surgeon, Watts Hospital, Durham, N. C., in collaboration with Alfred Rives Shands, Jr., B.A., M.D., Medical Director, Alfred I. DuPont Institute of The Nemours Foundation, Wilmington, Delaware, Visiting Professor of Orthopaedic Surgery, University of Pennsylvania School of Medicine, Philadelphia, Penna. Published by National Society for Crippled Children in the United States of America, Inc., Elyria, Ohio. Price $1.00.

Acute Alcoholic Intoxication. A Critical Review. By Henry W. Newman, M.D. The Stanford University Press, Stanford University, California. Price $2.50.

Diabetes Mellitus. By Zolton T. Wirtschafter, M.D. and Morton Korenberg, M.D. The Williams & Wilkins Company, Baltimore. Price $2.50.

Necropsy. A Guide for Students of Anatomic Pathology: by Bela Halpert, M.D., Assistant Professor of Pathology and Bacteriology, Louisiana State University School of Medicine, and Visiting Pathologist, Charity Hospital of Louisiana at New Orleans. The C. V. Mosby Company, St. Louis. 1941.

Where the standard of living is low, tuberculosis is high. In no way is poverty more tragic in its relation to disease than in tuberculosis. Charles R. Reynolds, M.D., Bull. Nat'l. Tuber. Assn., Aug., 1940.

Tuberculosis in the United States Army will be reported in accordance with the standards compiled by a group of specialists under the auspices of the National Tuberculosis Association and published by them under the title, "Diagnostic Standards and Classification of Tuberculosis." A copy of the booklet has been furnished each officer in the Army Medical School.

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SAYS AMERICA LEADS THE WORLD IN AFFLICTIONS OF THE STOMACH

Physician In Article In Hygeia Discusses The 'New National Disorder: The Great American Rebellious Stomach'

America has surpassed the rest of the world in developing weak, nervous and gravely diseased stomachs, Albert Soiland, M.D., Los Angeles, contends in the December issue of *Hygeia, The Health Magazine* in an article discussing what he terms "our comparatively new national disorder: the Great American Rebellious Stomach." In these weak, nervous and gravely diseased stomachs, he says, "lies a strong contributory factor to the increasing death rate from heart disease in comparatively young men."

Dr. Soiland attributes this national affliction to the physical lethargy of modern times; the introduction of new rich, rare and racy foods; the "deadly cocktail," together with the "present trend of events — breakfast on the run, lunch on the gallop and a beefsteak dinner eaten in twenty minutes.

"In no other country," he says, "are so many remedies advertised for gas pains, sour stomach, distress, nausea and heartburn. Fast-going Americans reach into their pockets about 10 a. m. and again at 3 p. m., each to fish out his own pet pill, tablet or lozenge. Two chews and both pain and distress vanish — a tribute to the concerns who make such alkalizers so pleasantly flavored with peppermint. In fact, that ingredient alone is often one half of the medication.

"During the past forty years the opportunity to view the human stomach at work has been afforded a great number of medical scientists the world over. This is one of the brilliant accomplishments made possible by the x-ray. At the first experience it is unbelievably startling to watch a prepared opaque meal enter the mouth, slide down the gullet and through the esophagus (the canal extending from the pharynx to the stomach), in hops, skips and jumps; then to trickle into the stomach until that pouch stands out in black relief like a Scotchman's bagpipe. Thus we are able actually to see and observe the frequent contortions of the stomach attempting to relieve itself of its pendant load. If all goes well the meal goes through into the duodenum (the first or proximal part of the small intestine) in jets, spurts and occasionally by mass movement. After that its journey to the terminal colon may be unimpeded, or it may again be confronted with abnormalities which can be described only in a textbook on gastrointestinal pathology. Of course, one meets many congenital abnormalities, among which the so-called upside down stomach is more common than is generally believed. However, the size, shape and position of the stomach are not necessarily important if it has good functioning valves at its intake and outlet."

Radiologists, Dr. Soiland maintains, have surpassed the old anatomists in the ability to study live stomachs in action. These range in shape, size and position somewhat in conformity to the anatomic nature of the person. The tall or thin person will probably possess a vertical or fish-hook type of stomach. This type empties more rapidly, which may be one reason why the slender person remains so throughout life.

The cowhorn shaped stomach, the physician continues, appears most frequently in the anat-

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omy of the average American citizen. It functions well and is second only to the fish-hook variety in its ability to take punishment, alcoholic and otherwise.

"The transverse stomach," he declares, "extends across the middle of the abdominal cavity. This kind may be more troublesome to its owner. . . . From the possessors of the transverse type, the health specialists, the diet faddists and the patent medicine venders derive a rich harvest. The unfortunate person with this type of stomach just loves to eat — almost lives to eat. This type of stomach keeps its food sufficiently long to permit thorough digestion, resulting in perfect assimilation and small amounts of waste products. In other words, this kind of stomach tends to obesity, much to the distress and disgust of the stocky person, whose short-coupled waistline unwillingly contributes to keep this stomach well filled in its upper and more or less restricted cage."

Regarding diet and the effects of some foods on the stomach, Dr. Soiland says that a perverse secretory mechanism has been developed in the Great American Rebellious Stomach. "The result is," he declares, "hypersecretion and varying degrees of sour stomach. All acids taken in excess may cause pain and distress, and frequently the most troublesome are the fruit acids. From the admonitions and advertising of food faddists one gathers the impression that fruit acids constitute the staff of life, and if one will fill up on these he will become so generously endowed with vitamins that the apple a day axiom is only for the amateur.

"The fact is that the indiscriminate use of acid fruit fluids may cause irreparable harm if not indulged in with a liberal allowance of common sense. Almost all authentic textbooks dealing with physiology of the gastrointestinal tract state that the ingestion of acids before meals, including the citric group, diminishes the normal hydrochloric acid to a marked degree.

"However, there is no need for any one to refrain from drinking these palatable and enjoyable fruit juices within reasonable bounds, but they should be limited to the time after meals in those persons who are deficient in normal acid secretions."



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SIMPLE DANDRUFF WILL NOT CAUSE BALDNESS, HYGEIA WRITER SAYS

Also Declares That It Is Not Necessarily A Forerunner Of Seborrhea Dermatitis, A Chronic Disease Of The Scalp

Despite the "warnings" of some advertisers of hair tonics and antiseptics, simple dandruff will not cause baldness nor is it necessarily a forerunner of seborrhea dermatitis (a chronic disease in which a discharge from the infected sebaceous glands collects in thick scales on the scalp, producing sores, itchiness and even baldness), Lois Mattox Miller, New York, declares in *Hygeia, The Health Magazine* for February.

"There are several forms of dandruff," the author explains, "but the only widely prevalent one is that which doctors call 'simple dandruff.' . . . Simple dandruff is a continual flaking of the top or 'horny layer' of the skin. . . . There is also a 'sticky' type of dandruff, in which the dandruff scales are moistened by an oily scalp condition. . . . Certain hair tonic and antiseptic advertisers have dramatized the resemblance between seborrhea and oily dandruff to heighten the dandruff scare.

"Seborrhea is a matter for the doctor. Fortunately, it is rare — only two tenths of 1 per cent of the people have it. To imply that simple dandruff is a form of seborrhea is to be deliberately misleading."

The cause of simple dandruff, she says, is not definitely known. Some investigators have attributed the condition to the presence of a germ, while others believe that it may be due to external causes such as the excessive use of alcohol and tobacco, rich food, lack of sleep, overexertion and nervous strain. All dermatologists agree that the glandular system has something to do with scalp conditions.

As to the possibility of checking dandruff, the author says that advertised proprietary remedies, hair tonics and dandruff "cures" are of little value, in spite of the claims of manufacturers that their products will "cure" dandruff, "get at the root of the trouble" or "penetrate the hair follicle and annihilate the germ."

"A few tonics," she declares, "contain ingredients that are definitely harmful to the hair and scalp. Most, however, are made up of oil or alcohol, water, coloring matter and scent. Yet even such a 'harmless' hair tonic can complicate the very dandruff condition it purports to 'cure.' Too much alcohol is bad for a dry scalp; too much oil is bad for an oily scalp. In any event, such preparations are never bargains, the bottle often costs more than its contents."

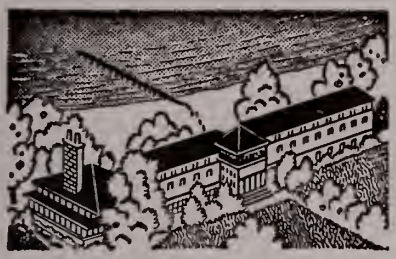
If the hair is naturally oily, the writer says, it should be shampooed with tincture of green soap, an easily obtainable, inexpensive fluid. If the scalp is dry, an ordinary toilet soap or one with an olive oil base should be used. The soap should not be rubbed directly on the hair because of the difficulty in rinsing.

"Medication in soaps," she advises, "has scant value: for one thing, the ingredients are never on the scalp long enough to have any real effect; for another, it is impossible to prescribe one medication suitable for all scalps.

"One shampoo a week seems to suffice for most people. But washing the hair twice a week or oftener will do no harm. . . . Avoid the barber's or the hair dresser's advice, and keep away from advertising 'scalp specialists.' . . . Never use any

(Continued on page 34)

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SIMPLE DANDRUFF (Continued)

scalp medication that a doctor prescribed for some one else. It may be definitely harmful for your type of scalp. . . .

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"The dermatologist explodes another persistent dandruff myth. Simple dandruff does not cause baldness! Nor is it necessarily a forerunner of seborrhea."

REPORT A MEANS OF PREVENTING SENSITIVITY TO LIVER EXTRACT

Giving Histaminase By Mouth To Patients with Anemia Before Injecting Extract Reduced The Reactions, Authors Say

By administering the drug histaminase by mouth for two days before and on the day of injection of liver extract to patients with anemia, reactions to the injections of the extract were prevented, C. B. Taylor, M.B., and D. W. Hilger, M.D., Minneapolis, report in *The Journal of the American Association* for November 29.

Although severe reactions to liver extract administered by injection into a vein or under the skin are relatively infrequent, they none the less have presented a serious problem in treating patients with anemia when they did occur.

Histaminase is a drug which presumably neutralizes the free histamine, believed to be a substance released from the tissues into the blood and taking an active part in allergic processes.

The authors' report is based on their experience with 2 patients with pernicious anemia who acquired severe sensitivity to parenteral (into a vein or under the skin) administration of liver extract. Definite, temporary reduction of the reactions, which involved itching, nausea and vomiting, to liver extracts followed the administration of histaminase to the 2 patients.

"We feel," the authors say, "that a method by which the liver extract can be administered parenterally in therapeutic (adequate treatment) doses, as was done in the cases reported, has definite advantages over the previous methods of attempting to solve the problem of acquired sensitivity to liver."

Medicine is, so far as we know, the only profession that is actively and energetically working day and night to reduce, or even to abolish, the need for its own services.—Westchester Medical Bulletin.

WHAT ONE MAN THINKS

For many years we have been reading "Vox Pop" communications in our daily newspapers. We often get much pleasure from these, for it is here that America speaks right out. We came across one such article in the *Indianapolis Star* the other day, a letter that interested us to no small degree.

The writer opens his letter with the succinct statement, "Some people don't stop to think of the importance of choosing a doctor." He then goes on to tell what he regards as points to be considered in choosing a doctor. His comment is so virile that we repeat a few paragraphs:

"One can, by taking pains, apply to the choosing of a doctor the same common sense and intelligent principles which guide him in the conduct of his other affairs: First, by making thorough and careful inquiry as to the professional standing and personal character of the physician he has in mind and by quiet and critical personal observation of the man himself.

"Much can be judged by appearances nowadays, and a patient has the right to demand that his doctor should have the antiseptic look. His hands should be well cared for, his finger nails trimmed and polished; his hair well groomed and brushed, his clothes pressed; no dandruff on his coat collar or grease spots on his clothes; his linen spotless, his shoes polished and his entire appearance immaculate, though not foppish.

"The doctor who has stopped studying and discussing has stopped thinking. The intelligent general public demands from its doctors higher standards than ever before; and, too, it has the right to make such demands."

This individual wants his physician to cast aside his know-it-all attitude. He feels the patient is entitled to answers to some questions about himself, with which we agree. He declares that the average patient is capable of grasping the explanations offered by the physician, and he feels that this establishes a more confident relationship between patient and physician. He also comments on the fact that physicians now are giving the public factual information regarding health matters, and that it would be well for them to carry out this "school of instruction" when in consultation with the patient.—*Indiana State Medical Journal.*

Confucius might have said: "A good X-ray picture is worth a thousand râles."

The draft itself can be made a contributory public health measure. If the army and the navy will assemble none but tuberculosis-free forces two objectives will be served. The first of these is an army of effectives instead of potential invalids; the second is the preventive medical value of discovering in two million recruits perhaps a hundred thousand young men with real or suspected tuberculosis needing attention. In the case of her army Canada has actually achieved the first objective. The United States cannot do less. Kendall Emerson, M.D.



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SAY PEPTIC ULCERS WILL HEAL WITHOUT THE USE OF ALKALIS

Two Doctors Find Milk and Cream Treatment Without the Attempted Neutralization Of Gastric Acidity is Satisfactory

The healing of gastric and duodenal ulcers will progress satisfactorily without the attempted neutrilazation of gastric acidity with alkalis, George F. Dick, M.D., and C. Wesley Eisele, M.D., Chicago, declare in *The Journal of the American Medical Association* for January 3 in a report on a series of 41 patients.

"Under hourly treatment with milk and cream without the use of alkalis," they say, "the speed of healing of gastric and duodenal ulcers compares favorably with that under other methods of treatment. Such treatment of a series of 41 patients brought about (1) the prompt disappearance of symptoms and the complete comfort of the patient, (2) the disappearance of . . . blood from the stool when such was present and (3) the disappearance of the x-ray crater (the cavity of the ulcer as revealed by x-rays)."

The two physicians explain that ulcer treatment without alkalis is not new and that their report confirms the findings of previous investigators.

"The use of alkaline substances in the management of peptic ulcer is almost universal, and such treatment is recommended in nearly all the current textbooks dealing with the subject," they say. "It is commonly assumed that complete neutralization of gastric acidity represents the ideal condition for ulcer healing, although no proof of this assumption exists. Furthermore, it is not certain that the highly alkaline stomach content obtained periodically in the course of alkali therapy is conducive to healing. That the conventional methods of treatment are not entirely satisfactory is manifest by the fact that scarcely a year passes without one or more new 'ulcer treatments' being advocated. At frequent intervals new kinds of neutralizing agents, supposedly with better virtues or fewer evils, are recommended."

In their series, 7 patients were suffering from gastric ulcers and 34 from duodenal ulcers. X-ray studies were used to determine the progress of the treatment. Seventy per cent of the craters

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PEPTIC ULCERS (Continued)

of duodenal ulcers disappeared within seventy-five days. As others have noted, the authors say, complete relief of symptoms occurred in nearly all cases long before the crater disappeared. In 31 cases all symptoms were controlled within one week.

NO BLINDNESS FROM OPHTHALMIA

In a report for the year ending October 31, 1941, the Illinois Society for the Prevention of Blindness calls attention to the fact that for the first time in three years the State has not had one case of blindness from ophthalmia neonatorum ("baby's sore eyes").

Doubtless much of the credit for this improvement goes to the combined efforts of the Society and the Illinois Department of Public Health towards achieving better compliance with the "silver nitrate law." This statute requires that a one per cent solution of silver nitrate be dropped into the eyes of every Illinois baby at birth.

There is a line on the regulation birth registration form which asks what treatment was given the child's eyes at birth. Each year the Illinois Society for the Prevention of Blindness checks all birth records in the offices of the State Department of Public Health in order to discover how well the requirements of the law are being met. If the line is not filled in, or the information is insufficient, or the statement as to treatment shows that it was not the approved one per cent solution of silver nitrate, the deviation is reported to the Illinois Department of Public Health for follow-up. Department representatives get in touch with the persons who made out the unsatisfactory forms and explain to them the value and importance of following the "silver nitrate law." Usually this is all that is necessary to win future compliance.

For 1940 the Society reported fewer deviations than ever before, of each kind. Where 1,840 birth certificates in 1938 gave no information on the prophylactic treatment, and 1,044 gave insufficient information, the numbers had fallen to 824 and 179, respectively, in 1940. Where unapproved treatment materials were named on 917 certificates in 1938, only 260 unapproved prophylactics were named in 1940.

DO YOU KNOW

That Bang's disease, brucellosis, malta and undulant fever, are one and the same disease?

That as late as 1930 it was a comparatively rare disease in Iowa?

That the spread of the disease is directly connected with infected livestock?

That the disease probably existed on the Island of Malta (from which it received one of its names) as early as 1880?

That David Bruce, an English physician, discovered the brucella germ (named for him) in the blood stream of one of his patients?

That Bang was responsible for much of the research on Malta fever and that is why it is also called Bang's disease?

That it has been shown conclusively that brucellosis in humans and its source in goats which were infected with a disease known as contagious abortion?

That the symptoms of the disease are weakness, sweating, chilling, persistent fever, loss of weight, aching and general discomfort?

That onset of the disease is usually gradual and that the above symptoms are particularly noticeable in the late afternoon?

That treatment consists largely in relieving symptoms and that medical preparations for shortening the duration of illness are now available?

That early diagnosis is possible and of utmost importance for effective and rapid cure?

That the disease may be prevented by the vaccination of livestock and by the pasteurization of dairy products?

The teacher who is not adequately examined for tuberculosis every year may be looked upon as a negligent and indifferent person, one who has little thought for her own health and, worse than that, little consideration for the health of fellow teachers and her students. J. A. Myers, M.D., Jour. Nat'l Ed. Assn., Jan. 1939.

If pulmonary tuberculosis is an insidious personal problem to those growing old, it is also one of the major unsolved health problems of the present day. Any effective approach to it must eliminate the present common attitude of simply sighing at the aged tuberculous patient with positive sputum. J. T. Freeman, M.D. and C. A. Heiken, M.D., Amer. Jour. of Med. Sciences, July, 1941.

As for tuberculosis, about one per cent of the total population of Canada probably suffers from some form of the disease. The present incidence of syphilis is rather uncertain but one cannot doubt that one per cent of the general population with this disease would be a minimum figure. C. E. Dolman, M. D., Canadian Pub. Health Jour., Aug., 1941.

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In cooperation with the Federal Office of Defense Health and Welfare Services the Women's National Emergency Committee currently broadcasts a Sunday afternoon radio series, *Listen America*, over the NBC Red Network. On this program are presented the following "three golden rules of nutrition."

1. A sound foundation for buoyant health can be built with seven ordinary foods: milk, fruits, eggs, seafood, meat, green vegetables, and bread with adequate vitamins in it.

2. As far as you possibly can, see to it that every day you eat at least: *a pint or more of milk,* so as to get some vitamin A, some of the B vitamins, good proteins, and plenty of calcium; *enriched bread* or biscuits, or *whole grain cereals,* or *whole wheat bread* (and enriched flour wherever you use white flour for cooking purposes), so as to get B vitamins and minerals; either a *tomato,* an *orange,* a *grapefruit,* or their juices, so as to get plenty of vitamin C; a big helping of *green leafy vegetables, and sometimes yellow ones* (raw or lightly cooked), so as to get more vitamin C, more vitamin A, and minerals; *eggs,* or *lean meat,* or *seafood,* so as to get more proteins, several B vitamins, and iron; an *apple,* a *peach,* a *pear,* or other *fruits* in season, so as to get added minerals and vitamins.

3. Then, unless your doctor has you on a special diet, eat anything else you like, with moderation, including the necessary fats. You will, in this way, be getting a daily nutritionally adequate diet.

We have no dependable measures that serve to bring about permanent interruptions of tuberculosis such as drugs, foods or even mechanical procedures. Therefore, our programs must be developed with one ultimate aim, namely the creation of an environment free from tubercle bacilli. In some places this has already been nearly accomplished, and only a short time is needed to complete the work. In other places, little has been done and much intensive work over a long period of time will be necessary. In both places, the fundamentals of control are the same and identical procedures must be carried out. J. A. Myers, M.D., Trans. N.T.A., 1940.

Tuberculosis in older persons reflects the presence of yesterday's epidemiology in today's society. J. T. Freeman, M.D. and C. A. Heiken, M.D., Amer. Jour. of Sciences, July, 1941.



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VOL. 81 NO. 3

March, 1942

In This Issue

Abnormalities of Intrauterine Environment Associated With 2000 Fetal and Neonatal Deaths

Management of Chronic Arthritis

(See page 25 for Table of Contents)

ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY SPRINGFIELD, MAY 19, 20, 21, 1942

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†Archives of Physical Therapy, *21*, 12 (Jan.), 1940.

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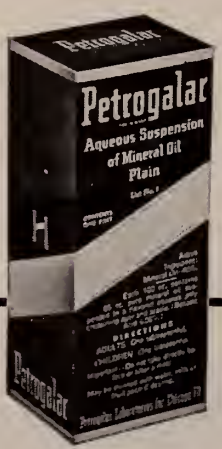
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American Can Company, 230 Park Avenue, New York, N. Y.

(1) 1936. Food Research 1, 3
1936. Ibid 1, 231
1938. Nutrition Abstracts and Reviews 8, 281
1939. The Canned Food Reference Manual, American Can Co., New York.
1940. J. Am. Diet. Assoc. 16, 891

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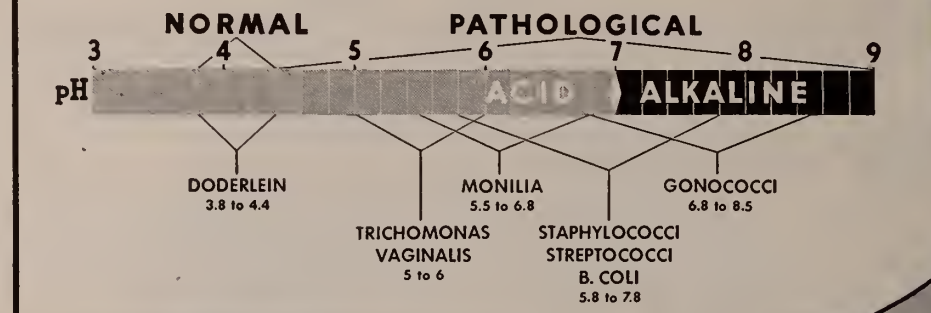
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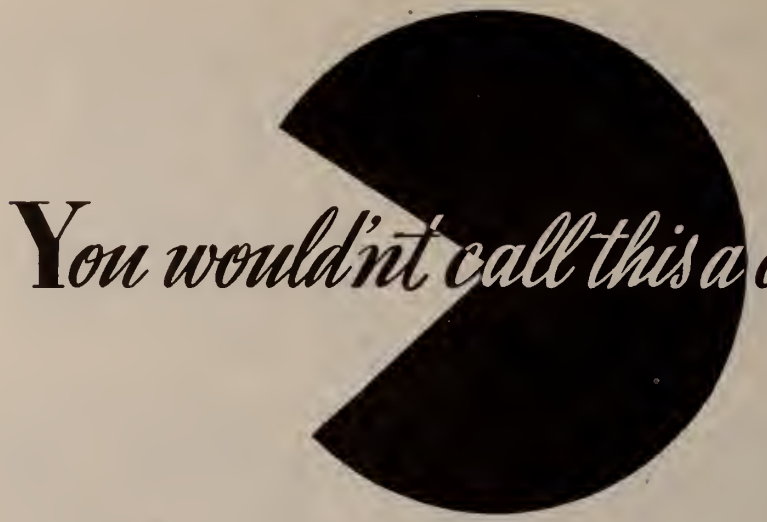
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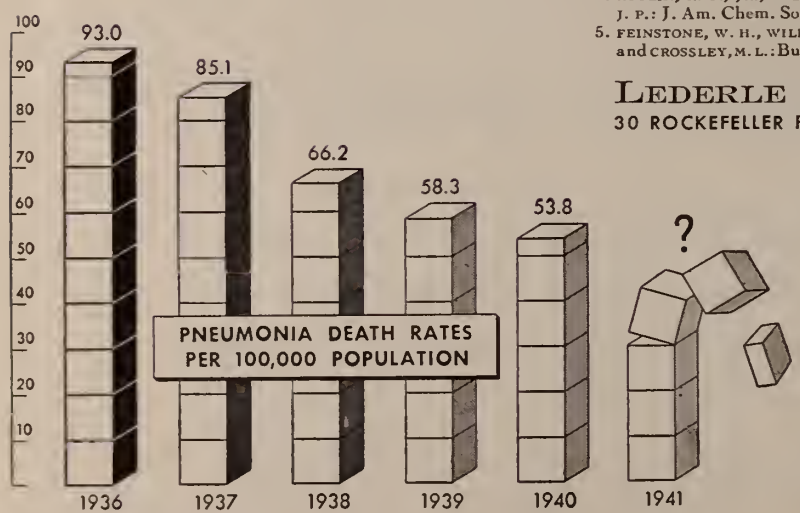
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BIBLIOGRAPHY:
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2. DOWLING, H. F., et al; J. A. M. A. 117:824 (Sept. 6) 1941.
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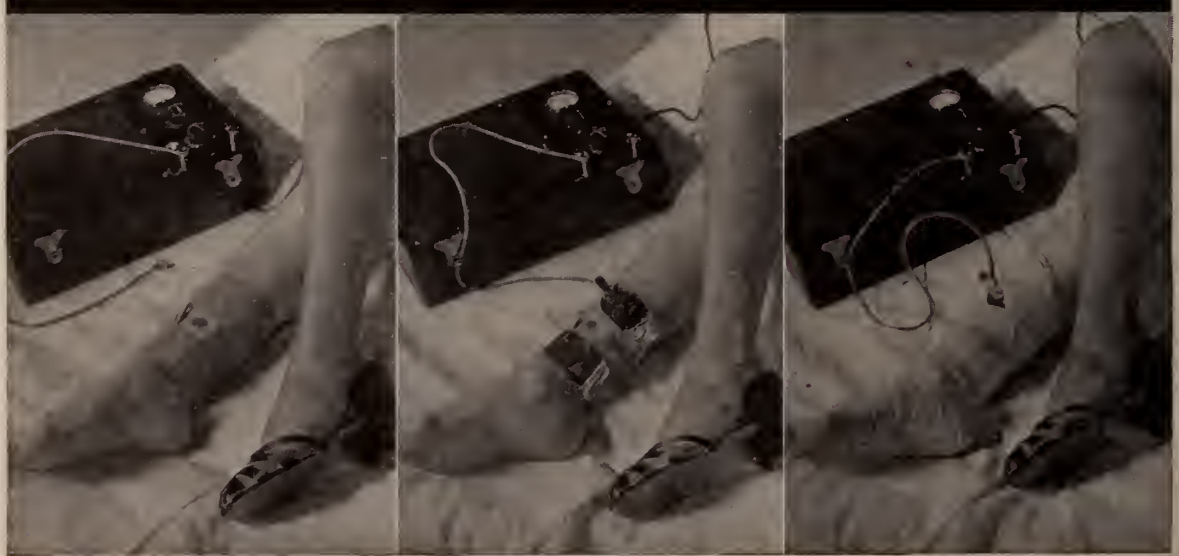
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* *J.A.M.A., 93:1110, Oct. 12, 1929*
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** *The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941*

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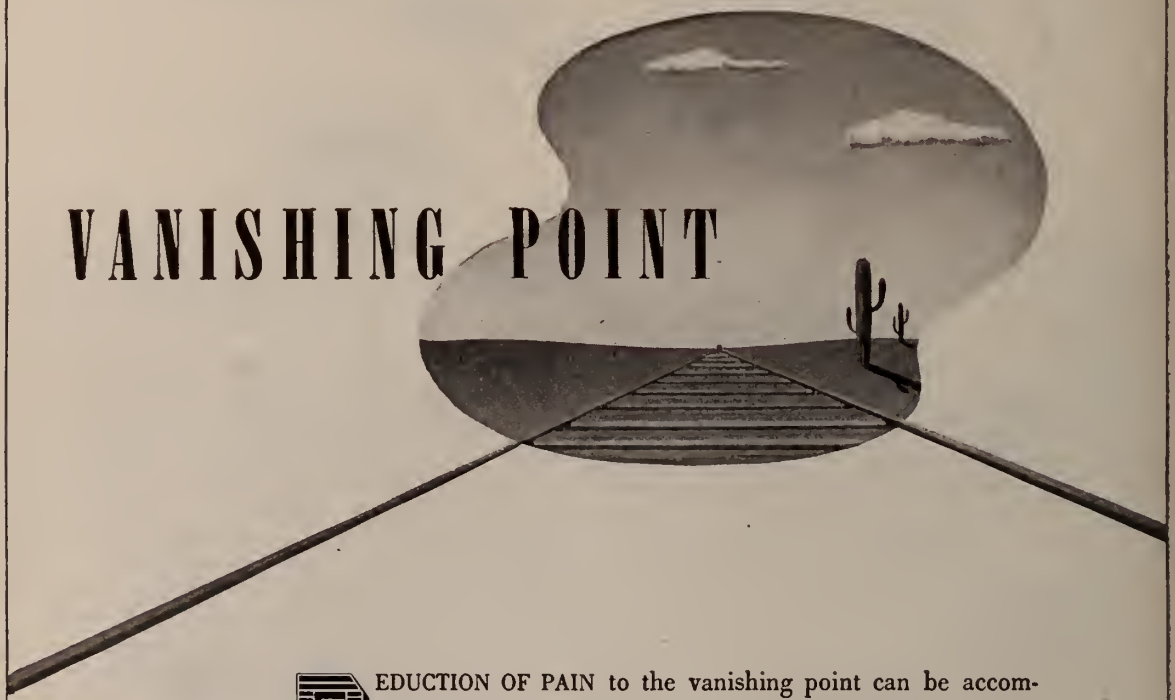


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The Illinois Medical Journal

March, 1942

VOL. 81, NO. 3

Official Journal of the Illinois State Medical Society

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Editorials

SELF MEDICATION

For a long time we have seen many serious and frequently disastrous results from self medication. Members of the medical profession realize that there are almost as many remedies for treating certain diseases as there are people who have had that particular disease. The last remedy used is usually considered the one which effected the cure, and the patient loses no time in telling his friends to be sure to use that same remedy if they have a cold, headache, stomachache, or whatever the ailment may have been.

There is no disease which causes so many layoffs on the part of American workers as the common cold, and everyone has a remedy for it. For those who seem uncertain as to what they should do, the radio will invariably give the answer. Almost any evening no less than a dozen broadcasts go out over the several networks, sponsored by concerns manufacturing preparations which will relieve colds "quickly and effectively." They urge the sufferer to take these preparations without delay, and invariably they insist that the taker need only follow the printed directions to get complete and quick relief.

Some of these remedies work several ways at the same time, and are to be taken orally; while others act through their alkalinizing ability, and through the laxative effect they produce. Others are to be rubbed on and go at once to the seat of the trouble, while some are to be inhaled to get quick relief. It is rather interesting that few of the broadcasts urge the sufferer to see his family doctor if relief from their remedies is not obtained.

The average drug store is well stocked with many different types of vitamin products and it becomes easy for the buyer to shop around and get the type which has been recommended, and frequently information on the proper types and dosage is freely forthcoming. In view of the fact that the professional ideas concerning vitamins and avitaminoses are changing rapidly and the final evaluation on the subject has not as yet been definitely determined, it seems that physicians and other health workers should stress particularly the necessity for all people to eat regularly and be certain their food contains the proper nutritional elements and vitamins for their daily needs. No one can deny that vitamins have a definite place in modern therapy, yet unless sufficient stress is placed on the other essential nutritional elements, the mere taking of A.B.C. and D. daily, will not meet the actual requirements.

Physicians know that many serious diseases begin with headache, digestive disturbances, backache, sore throat, nervousness and other symptoms which many believe can be cured through the use of various types of nostrums, especially if they are mentioned over the air or advertised in the papers. Warnings have been sent out repeatedly by health department officials urging people to seek proper advice from their physician rather than endeavor to get re-

lief through self medication. At this time, with the all-out program under way, it is more important than ever before that layoffs be limited to the greatest extent possible to keep our supplies coming off the lines and going in a steady stream to those places where they are needed most.

Then, there is another side of this subject which seems to be worthy of serious consideration right now. Many of these nostrums or "secret remedies" do contain vital drugs which should be conserved. With so many people taking them unnecessarily it is quite obvious that the supply available for civilian use will be used up more rapidly if they are used unnecessarily, which may eventually result in a rationing of drugs, some of which come from the far east and other distant lands, making them difficult to get in sufficient quantities now.

With an increasing army it is going to be necessary to have a vast supply of drugs available everywhere the army goes to be used as necessary by the medical officers attached to the many units. This too will be an important factor for priorities should naturally favor those who are to do the actual fighting to win this war.

It seems quite probable that within the near future, the government will give more serious consideration to this important subject, and we may see an organized effort to conserve all of the important drugs now being used in the field of medicine. When this is done we will probably see fewer people endeavoring to treat themselves especially for supposedly minor ailments. They will naturally do what is actually best for themselves at all times, consult their physician in times of illness, and what is really of greatest importance, they will probably consult him early!

HAVE YOU A HOBBY?

At many medical meetings during recent years a "hobby show" has been featured along with the scientific exhibits. It is most interesting to note the wide variety of hobbies of physicians as shown in these exhibits. Some physicians are painters, many are collectors of stamps, coins, Indian relics, minerals, and many other things found advertised widely in modern hobby magazines in recent years.

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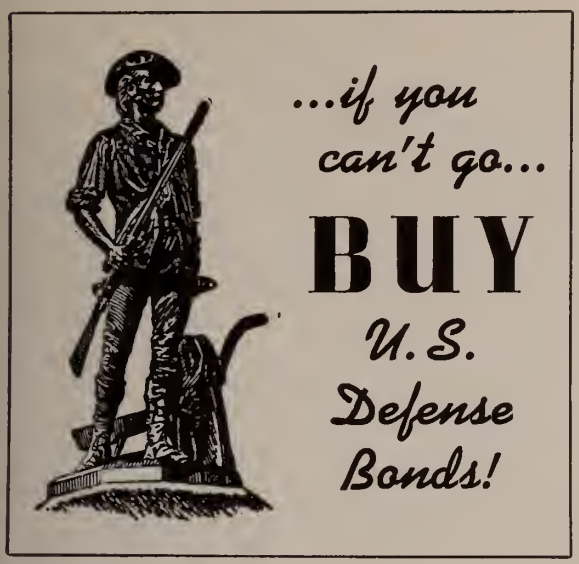
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Many physicians have workshops in the basements of their homes, and spend time there at irregular intervals making many articles of furniture and other things too numerous to mention. It has been called to our attention that a number of physicians have electric trains running through miniature cities, over bridges, and through tunnels, with a display which has required hundreds of hours to complete it, then they say it is never really finished.

In the home, office or workshop of many physicians may be seen many mounted specimens of big game heads, fish, butterflies, birds, and other objects depending on the particular hobby of the man himself. Sporting goods proprietors report that the physicians are among their best customers, many members of the profession having a fine assortment of fishing tackle for both bait and fly casting technique. Some even spend many hours making their own flies and other lures.

In these troublesome days when everyone is continuously on the go, it seems most fitting that physicians should have hobbies and spend some time developing them throughout the year. It is known definitely that the physicians are probably subjected to more constant worry and strain than members of any other profession. It is quite obvious that many have lost the ability or perhaps the inclination, for complete relaxation which hobbies will afford. This may be an important factor in the prevailing high rate of heart ailments among physicians.

Coronary disease is a prominent factor in considerations of deaths among physicians, and it was recently shown that over a period of seven years, while there was a general increase of 114% in coronary deaths among men in general, the coronary mortality among physicians rose 240%. One striking thing in this consideration is the fact that this dreaded ailment is striking younger men, and it is not uncommon to find physicians in the third and fourth decades of life succumbing to coronary thrombosis.

There are, of course, many other factors involved in the cause of cardiac deaths among physicians, but it does seem quite logical to assume that physicians will be better off physically and most likely live longer if they will have some interests outside of the regular professional grind.

Many physicians are interested in farming, and there are some of the best farms in the state of Illinois owned and supervised by members of the medical profession. It is quite likely that among the members of the Farm Bureau in every county in Illinois will be found a few physicians who are interested in all phases of agriculture as well as in the raising of fine stock.

With the present all-out program for national defense, and the many additional duties assumed by physicians all anxious to do their part, we shall most likely see an increase in heart ailments among members of the profession unless each member becomes sufficiently heart conscious to warrant both an investigation of his own physical condition and the assuming of some outside interests to afford the much needed relaxation.

"HISTORY OF MEDICAL PRACTICE IN ILLINOIS"

A few years ago, the Illinois State Medical Society published the History of Medical Practice in Illinois, with the late Lucius H. Zeuch as editor for the volume. Subscriptions were received prior to the publication of this book, at $10.00. It was soon learned that it would be impossible to put all available historical data in one volume, and the Society decided that eventually a second volume would be published, and there would be no additional cost to subscribers.

Soon after the first volume appeared, Dr.

Zeuch died, and Dr. Charles J. Whalen, then editor of the Illinois Medical Journal was selected as editor for the proposed second volume. On account of unsatisfactory conditions, it was decided to hold the second volume in abeyance until some future date. Since the death of Dr. Whalen, it was deemed advisable to withhold further action on account of the present emergency.

The Society has on hand at this time, a number of copies of the first volume edited by Dr. Zeuch, which contains much valuable medical historical data, well illustrated, bound in cloth and in perfect condition, which may be procured while the supply lasts, for $5.00. Physicians or libraries desiring to procure a copy of this unusual book, may send their remittance to the Secretary, and a copy will be forthcoming, post paid within a few days.

Address: Harold M. Camp, M.D., Secy.
Illinois State Medical Society,
Monmouth, Illinois.

THE ORAL EXAMINATION OF PETER LA TERRIERE, HARVARD 1789

Describe the process of deglutition. What is the upper orifice of the stomach called? What conveys bile into the dodenum? How is the blood brought back from the lungs? How many lobes has the cerebrum? Of what is blood composed? What is inflammation? What is a pleurisy? Did you ever read Sydenham? What is bilious fever?

Questions such as these, and perhaps a good many more, were fired at Peter with machine gun rapidity, while the austere Dr. Isaac Rand, grimly determined that the Massachusetts Medical Society should have its hand in the proceedings, clocked the trembling victim and watched for signs of delay or hesitation in his answers. The last straw was the question of a rather pompous gentleman from the seats who wanted to know what was a sudorific and which was the most efficacious. This was too much for La Terrière's audacious temper; and anyone who has graduated from the Harvard Medical School or has suffered through oral examinations will feel like extending him a hand across the centuries. "A sudorific," Peter answered, "is anything that produces perspiration. The best way to make a man sweat that I know of is to make him stand up in a place like this on a hot afternoon and answer questions!"

An eighteenth century audience was never put out by a proper display of humor. They clapped their hands and shouted, "Well met! The candidate deserves his diploma."—*Reginald Fitz, Annals of Medical History, September,* 1941.

TREATMENT OF GONORRHEA WITH SULFATHIAZOLE

H. M. Boslow, Langley Field, Va., reports (*Military Surgeon,* June 1941) that fifty-three of fifty-eight cases of acute and chronic gonorrhea were cured, and the remaining five had positive cultures or morning discharge after two weeks' treatment but were improved clinically, by the following routine sulfathiazole treatment: On admission four to five Gm. were given followed by one Gm. every four hours for twenty-four hours. The dose was then reduced to 0.66 Gm. every four hours for forty-eight hours and then to 0.5 Gm. every four hours for ten to twelve days. The initial large dose was designed to avoid sulfathiazole resistant strains which have been shown to exist *in vitro* with related compounds. There were practically no toxic effects. One patient had a headache for twenty-four hours. One had conjunctivitis for three days and one had nausea and vomiting on the eleventh day of treatment. Therapy was discontinued in this case. Hemoglobin, white blood cell and red blood cell count were normal throughout treatment.

SAY SURGERY GIVES BEST RESULTS IN TREATING HIGH BLOOD PRESSURE

The outlook for patients with a high level of blood pressure (hypertension) and spasmodic contractions of the minute blood vessels of the eye is much more favorable following an operation in which certain nerves controlling the contraction and dilation of the blood vessels are severed than is the outlook following medical treatment, Ward Wilson Woods, M. D., and Max Minor Peet, M.D., Ann Arbor, Mich., report in *The Journal of the American Medical Association* for November 1.

"The surgical treatment of patients with malignant hypertension has resulted in a survival of 33 per cent after five years," the two surgeons add, "whereas following medical treatment . . . the mortality was more than 99 per cent."

Their findings are based on a comparison of the results of the nerve severance operation in 76 patients with those reported by two other physicians from medical treatment of 219 patients with the same condition. The surgical group were followed for from five to seven years after the operation and the medically treated group were followed from five to nine years. The discrepancy between the length of the two studies does not obviate relatively accurate comparison, the two surgeons say, because the time span of the medical group is calculated from the time of the first observation of the patient whereas in the surgical group it is calculated from the time of operation.

Correspondence

IOWA AND ILLINOIS CENTRAL DISTRICT SPRING MEETING

The spring meeting of the Iowa and Illinois Central District Medical Association will be held Thursday, March 26, 1942 at the Fort Armstrong Hotel in Rock Island, Illinois.

The guest speaker of the evening will be Dr. Robert Lee Sanders, associate professor of surgery at the University of Tennessee College of Medicine, and chief of the surgical division of the Sanders Clinic in Memphis, will speak on "Surgical Lesions of the Colon."

Dr. F. E. Schmidt of the Lederle Laboratories will present a motion picture in color with sound on "All Sulfonamide Therapy."

A dinner at 6:30 P. M. will precede the scientific meeting.

CONTRIBUTE TO BENEVOLENCE FUND

The following letter with a check for $100.00 to be added to the Benevolence Fund of the Illinois State Medical Society has been received. This is the first donation to the fund which has come from any group outside our Society or Auxiliary. The work of the Benevolence Committee has been growing during the past year and a half, and quite a number of beneficiaries are now receiving assistance.

Members of the Illinois State Medical Society, individual county medical societies and the Woman's Auxiliary should do everything possible to promote the giving of contributions to this fund, as this should eventually be a self-perpetuating fund to aid deserving, disabled members, and widows or widowers of former members.

The Society is most grateful to the Medinah Temple's Medical Staff for this donation, and they may be assured that the money is to be used by the Committee to a good advantage.

The Editor.

Medinah Temple
A.A.O.N.M.S. Oasis of Chicago

Dr. John S. Nagel
Chicago, Illinois

Dear Dr. Nagel:

At the Annual Ladies Night Dinner of Medinah's Medical Staff it has always been customary to give each lady a personal gift.

The ladies this year, because of the war, were given an opportunity to vote a sum of money toward a benevolent fund.

They voted overwhelmingly that this sum be given to the Illinois State Medical Society benevolent fund. Enclosed find check for $100.00.

Respectfully
Dr. Fred H. Muller,
Secretary-Treasurer
8056 S. Justine St.,
Chicago, Illinois

ANNOUNCE PSYCHIATRIC POSTGRADUATE INSTITUTE

The Fifth Institute on Postgraduate Psychiatric Education will be held in the Missouri State Hospital at St. Joseph, Missouri from March 23 to April 4 according to an announcement of the American Psychiatric Association.

Designed for state hospital men and other physicians interested in psychiatry, it is open without charge. Physicians in military service are also invited.

A comprehensive course has been prepared. Sessions will be conducted by Dr. Carmichael, Dr. Watters, Dr. Reese, Dr. Hamilton, Dr. Weil and Dr. Tillman among others.

UNIVERSITY OF ILLINOIS
College of Medicine
Department of Obstetrics and Gynecology
Chicago, Illinois

The CHARLES SUMNER BACON LECTURES for 1941-1942 will be delivered in the Medical and Dental College Laboratories Building, 1853 West Polk Street, Chicago, in Room 423, on March 18 and 19, 1942

By

Dr. Jennings C. Litzenberg
Professor of Obstetrics and Gynecology,
Emeritus
University of Minnesota
College of Medicine
Minneapolis

PROGRAM

March 18, 1942, Wednesday, 1 P.M. —
"The Significance of the Decreased Maternal Mortality Rates."

March 19, 1942, Thursday, 4 P.M. —
"Tradition and Truth Concerning Ectopic Pregnancies."

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Haddon Hall will be the headquarters for the Annual Meeting of the Woman's Auxiliary to the American Medical Association, which will be held in Atlantic City, New Jersey, June 8-12, 1942.

COUNTY NEWS

The January meeting of the Auxiliary to the Bureau County Medical Society was well attended.

Mrs. T. S. Huggard of Oglesby, program chairman for the meeting, presented Mrs. R. E. Davies of Spring Valley. Mrs. Davies showed pictures taken while touring Guatemala and exhibited tapestries and other souvenirs collected during the tour.

Mrs. Christine Ryman Pensinger, supervisor of Institutional Housekeeping for the State of Illinois spoke at a joint meeting of the Vermilion County Medical Auxiliary and the American Association of University Women, Tuesday, Jan. 6th.

Taking as her subject "Housekeeping in the Institutions and the Place of the Homemaker in the War," Mrs. Pensinger touched on the many problems involved in keeping house for the 51,304 employees and patients in our state institutions.

In addition to her work in the department of welfare, the speaker is now cooperating with Gov. Dwight H. Green, as head of the Illinois State Council of Defense in planning a program to help housewives face the problem which the present war has created in the home.

Hostess at the dinner gathering was Miss Mary Miller, who was assisted by her own association committee and that of the Medical Auxiliary.

Miss Harriet Fulmer, R. N. Supervisor of Nurses for Cook County Health Unit spoke on "History of Rural Nursing Service in Cook County" at the February meeting of the Auxiliary to the Chicago Medical Society.

Mrs. Harry Otten, President

Mrs. Charles W. Stigman,
Press & Publicity

ANY PHYSICIAN MAY EXHIBIT "WHEN BOBBY GOES TO SCHOOL" TO THE PUBLIC

Under the rules laid down by the American Academy of Pediatrics, their new educational-to-the-public film "When Bobby Goes to School" may be exhibited to the public by any licensed physician in the United States.

All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film.

"When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed by physicians without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Reducing exercise: Move the head slowly from side to side when asked to have a second helping.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

As a result of the war new problems arise that have patriotic, ethical and economic bearings on the profession as a whole.

First: We as a profession consider it our patriotic duty to render such medical service as is needed in the various branches of the Military Service and to our civilian population. Some will render that service in one of the branches of the service as Commissioned Officers, and still others will remain at home and take care of the civilian population and render whatever service they are called upon to do to the best of their ability.

This entire problem as regards service is to be handled through the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. This service is a result of the efforts of the American Medical Association and its Officers and Committees, and should provide a much better type of service than was rendered in the last World War. To make it effective and to insure the continuance of this method the medical profession must respond to the questionnaires that will again soon be mailed out covering the entire service.

Second: Those who enter the service and leave their practice and their affiliations with medical schools, hospitals and clinics will to a large extent do so at a financial loss; and those who remain in practice will undoubtedly have an increased revenue as a result of increased work. It is true that a large part of that increased revenue will be paid to Uncle Sam in the form of income tax and other taxes, but it will probably still leave an increased revenue; aside from this they will not loose their practice. Those remaining at home should assume a definite responsibility to maintain and restore former affiliations to those in the service immediately upon their return to private practice. In addition they should do everything within their power to return patients to the doctors who have been in the service. This happened in some instances after the last World War, but in some instances quite the opposite took place. In addition the young doctors going direct from the completion of their internship to the service are undoubtedly due consideration when they return from the service.

Thought must be given to these problems far in advance if they are to be properly taken care of, and most of all those who remain at home must give serious consideration to maintaining our present system of medical practice during the war. It is natural that with Civilian Defense and with some dislocation in industry as regards medical service that there may of necessity have to be temporary changes made, but we should be very sure that these changes are really for defense, and that defense is not used as an excuse for making such changes or inroads in the present system of medical practice. Unless we can maintain the present system we have little to offer those who are returning for the sacrifices and losses that their services will necessarily bring to them.

Third: Many doctors entering the service will not return and undoubtedly their families will not be in sufficiently good financial circumstances to carry on. In addition among the older doctors we may find many breakdowns in health due to over work which will necessitate their retirement. Many of them will not have a sufficient income to carry on. The Illinois State Medical Society organized a Benevolence Fund some two years ago for the benefit of doc-

tors and their widows who were in need of financial help. It would seem at the present time that every physician at home might contribute to this Benevolence Fund so that we will be sure that families of doctors who do not return from the service may, where needed, have this help and also that doctors becoming physically handicapped may have such help where needed. Many of us make contributions to various charity organizations to enable them to carry on their work. Here we have an opportunity to render help to those physicians who have devoted their lives to the profession and the public. Those familiar with the work of the Benevolence Fund Committee are impressed with the excellent work and the vital need for such a fund. The members of the committee give a great deal of their time to this work. Let us support this work that is being done for the members of our profession. This contribution is deductible from your income tax.

The Woman's Auxiliary in the past year have been doing creditable work in their contributions to the Benevolence Fund and it would seem at this particular time that they should continue, even to a greater extent, to carry on this work.

Dr. R. K. Packard, Chairman
Committee on Medical Economics

THE PHARMALOGICAL SHOCK TREATMENT OF SCHIZOPHRENIA

Considerable number of patients have now been treated by so-called "shock therapy," so that a statistical study although faulty will present certain evidence as related to this form of therapy. This study consisted of treated cases and untreated cases which were used as a control group. It is apparent from this study that the number of recovered cases as well as the total number showing some degree of improvement was about three times that in the control group receiving the usual institutional care.

When all types of schizophrenia are considered there is a recovered rate which stays constant at about 13%. The range of percentage cases with complete remissions varies from 85% to below 5% and is dependent on the type of disease and its duration, these factors giving the wide variation in per cent of those recovered. All statistical studies are difficult to evaluate because of the numerous variables, namely, difficulty of diagnosis, records which lack uniformity, incomplete history, duration of disease, in that the more chronic the disease the longer its existence, the more difficult it is to bring about a remission. Then, too, recovery rate must be ascertained by a follow-up program for quite an extended period. Some patients after treatment show increased improvement for a period of two-years, on the other hand, others during the same period will have a relapse.—*J. R. Ross, M.D., I. M. Rossman, M.D., W. B. Cline, Jr., M.D., O. J. Schwoerer, M.D., American Journal of Psychiatry, March,* 97: 1007-1023, 1941.

NEURODERMATITIS TREATED WITH HYPOGLYCEMIC REACTIONS

The group of dermatoses variously considered under the names neurodermatitis, atopic dermatitis and generalized or disseminated neurodermatitis are among the most resistant therapeutic problems in dermatologic practice. Many remedies have been tried with more or less success.

With any method, treatment lasts for months, even years; yet some patients recover without any special treatment. Most of the patients with the severe conditions require psychiatric attention — perhaps all do — because of an underlying depression and emotional tension.

Our interest in the neurodermatoses was aroused by the development of a stubborn dermatitis in 2 depressed patients. Since the frequent good effects of insulin shock therapy on the skin were known, these patients were given short courses of mild hypoglycemic shocks. The gratifying results led to the treatment of 3 additional patients. All primarily suffered from emotional tension and depression.

Repeated hypoglycemic shocks, reactions sufficient to produce visible effects, particularly relaxation and diaphoresis, constituted the only factor to cure or to relieve the symptoms of the cutaneous disturbances. Treatment in all cases was successful.—*Sidney J. Tillim, M.D. and Mildred T. Squires, M.D., Archives of Dermatology and Syphilology, June,* 43: 980-991, 1941.

Doctor: "Miss Jones, you're badly in need of a little sun and air."

Miss Jones: "But hadn't I better get married first?"

Medicine and National Defense

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

This material taken from the Medical Preparedness Section of the Journal of the American Medical Ass'n., 2/21/42. More complete information on the subject is contained in this article, pages 625-638 of the J.A.M.A.—Editor.

HISTORY

The Procurement and Assignment Service was authorized by the President on Oct. 30, 1941. The creation of this agency resulted from a recommendation from the Subcommittee on Education to the Health and Medical Committee of the Office of Defense, Health and Welfare Services on March 31, 1941. Following a meeting of the Health and Medical Committee on April 28, this recommendation was transmitted to the Committee on Medical Preparedness of the American Medical Association for its consideration. The latter committee presented the recommendation to the House of Delegates of the American Medical Association, which resolved:

That the United States government be urged to plan and arrange immediately for the establishment of a central authority with representatives of the civilian medical profession to be known as the Procurement and Assignment Agency for physicians for the Army, Navy and Public Health Service and for the civilian and industrial needs of the nation.

On Oct. 22, 1941 the Health and Medical Committee named a commission to draft a plan for development of such a service. As a result of the meeting of this commission, it was recommended that an office for procurement and assignment of physicians, dentists and veterinarians should be established, that the office should be a part of the Office of Defense Health and Welfare Services and that the function of the office should be to procure personnel from existing qualified members of the professions concerned. The Procurement and Assignment Services, through the facilities of the Office of Defense, Health and Welfare Services, would have available the fiscal budgetary, legal and advisory departments of a well established governmental agency. The concluding paragraphs of its report are as follows:

For this reason a special commission, appointed by the Health and Medical Committee of the Office of Defense Health and Welfare Services has made the following recommendations:

1. That an Office of Procurement and Assignment of physicians, dentists and veterinarians be established.

2. That this office shall function as part of the Office of Defense, Health and Welfare Services, which is itself a part of the Office for Emergency Management.

3. The function of this office shall be to procure personnel from existing qualified members of the professions concerned. The office shall receive from various governmental and other agencies requests for medical, dental and veterinary personnel. These requests shall indicate the number of men desired, the time during which they must be secured, the qualifications and limitations placed on such personnel. The office must then by appropriate mechanism arrange to secure lists of professional personnel available to meet these requirements, utilizing such existing rosters, public and private, as it may find acceptable. It shall also be authorized to approach such professional personnel as is

considered to be available and to use suitable means to stimulate voluntary enrolment.

4. The Office of Procurement and Assignment shall consist of a board of five members, one of whom shall be chairman. This board shall be chosen from members of the medical, dental or veterinary professions and shall not include any salaried employees of the federal government. This board shall function without salary but shall be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of its duties.

5. The board shall appoint an executive secretary who shall serve also as executive officer and who shall be without vote in its deliberations and decisions. He shall serve as a full time employee with salary (to be determined) and with such assistants as the board may determine necessary to carry out its functions.

6. The board shall be authorized to establish such advisory committees and subcommittees as may be necessary. These committees shall represent the various interests concerned, such as medical, dental and veterinary schools, hospitals, Negro physicians and women physicians. Members of such committees shall serve without salary but shall be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of their duties.

7. The board shall also be authorized to request various agencies of the government using medical, dental or veterinary personnel to appoint liaison officers and representatives to advise the board in carrying out its functions.

8. In carrying out its functions the board shall cooperate with such agencies as are now established under the Selective Service as well as other federal agencies.

On October 30, 1941 the following letter to the President from the Director of Defense Health and Welfare Services was approved by the President and constitutes the authority under which the Procurement and Assignment Service operates:

October 30, 1941

My Dear Mr. President:

The coordination of the various demands made on the medical, dental and veterinary personnel of the nation and the most efficient utilization of this personnel would seem to require the establishment of a special agency capable of recording the qualified personnel available, of assigning or encouraging enlistment of such personnel in the services where most needed and of giving every qualified physician, dentist and veterinarian an opportunity to enroll himself in some service demanded by the national need.

For these reasons I wish to propose that there be established as one of the principal subdivisions of the Office of Defense Health and Welfare Services an office for the procurement and assignment of physicians, dentists and veterinarians. This office would be known as the Procurement and Assignment Agency.

The functions of the agency would be (1) to receive from various governmental and other agencies requests for medical, dental and veterinary personnel, (2) to secure and maintain lists of professional personnel available, showing detailed qualifications of such personnel, and (3) to utilize all suitable means to stimulate voluntary enrolment, having due regard for the overall public health needs of the nation, including those of governmental agencies and civilian institutions.

The agency would consist of a board of five members, one of whom would serve as chairman. The board would serve without salary but would be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of its duties.

A full time executive officer (with salary to be determined) would be appointed, together with such assistants as would be required to carry out the functions of the Agency.

I recommend that the board be composed of Dr. Frank Lahey, chairman, Dr. James Paullin, Dr. Harvey B. Stone, Dr. Harold S. Diehl and Dr. C. Willard Camalier.

This communication is addressed to you in accordance with provisions contained in paragraph 4 of the Executive Order, dated Sept. 3, 1941, "Establishing the Office of Defense Health and Welfare Services in the Executive Office of the President and Defining Its Functions and Duties," to the effect that the President shall approve the establishment of the principal subdivisions of the Office of Defense Health and Welfare Services and the appointment of the heads thereof.

In the event you approve the establishment of the Procurement and Assignment Agency, together with the board membership as recommended, I shall proceed immediately with the creation of the agency and will prepare budget estimates in the amount of approximately $50,000 for submission to the Budget Bureau to cover the costs of the agency.

In addition I would propose to instruct the Agency to draft legislation which may be necessary to submit to the Congress providing for the involuntary recruitment of medical, dental and veterinary personnel, in the event the exigencies of the national emergency appear to require it.

Sincerely yours,

Approved Paul V. McNutt,
Franklin D. Roosevelt. Director.

This letter was approved by the President, Oct. 30, 1941, and the Procurement and Assignment Service was organized accordingly.

PROCEDURE TO MEET PRESENT NEEDS

The present Army and Navy needs are for physicians under 36 years of age. Those under 36 desiring immediate commission may write now to the Procurement and Assignment Service, 601 Pennsylvania Avenue N.W., Washington, D. C. Their letters will be treated as applications and those who are qualified will receive proper application forms with view of commission in the Army or the Navy. All physicians over 36 and all dentists and veterinarians should await the receipt of the enrolment forms.

METHODS OF ACTION OF THE PROCUREMENT AND ASSIGNMENT SERVICE

By authority of the President, the Procurement and Assignment Service receives requests for personnel from the following governmental agencies:

MEDICAL

United States Army Medical Corps.
United States Navy Medical Corps.
United States Public Health Service.
United States Veterans Administration.
United States Civil Service Agencies.
St. Elizabeth's Hospital (Washington, D. C.), Resident Staff and Interns only.
United States Indian Service,
Panama Canal Service.
Office of Civilian Defense (full time).

DENTAL

United States Army Dental Corps.
United States Navy Dental Corps.
United States Public Health Service.
United States Veterans Administration.
United States Indian Service.
Panama Canal Service.
Office of Civilian Defense.

VETERINARY

United States Army Veterinary Corps.
United States Navy Hospital Corps Specialists.
United States Public Health Service.
United States Bureau of Animal Industry.
Federal Extension Service.
State Extension Service.
United States Department of Agriculture Marketing Service.
War Department (Federal Civil Service Status — not Army).
Federal Agricultural Experiment Stations.

The Procurement and Assignment Service is also charged with the stimulation of voluntary enrolment, having due regard for the overall health needs of the nation, including the personnel of civilian institutions.

When a request is received from a federal agency for medical, dental or veterinary personnel, the names of those who are qualified to meet the specifications established by the requisitioning agency, who are available and who have indicated by enrolling with the Procurement and Assignment Service, their willingness to apply for a commission or employment are supplied by the National Roster, utilizing the punch card system previously described. These names are arranged in lists by states. A copy of each list is forwarded to the Consultant Office of physicians, dentists or veterinarians respectively, where each is made more accurate by the elimination of the names of those who do not qualify in view of the special information held in the Consultant Office. These lists are then referred to the state chairman, who make a decision as to the immediate availability of the physicians, dentists or veterinarians concerned. Such a step is necessary because the availability of the individual may have changed in the period between the return of the official questionnaire in March

1942 and the time when the physician, dentist or veterinarian is notified of the need for his services. The lists are then forwarded by the state chairmen to the Procurement and Assignment Service in Washington.

From these lists the central office obtains the names of those individuals who have thus been found qualified and available.

PHYSICIANS, DENTISTS OR VETERINARIANS FOR THE UNITED STATES ARMY MEDICAL DEPARTMENT

The procedure with reference to supplying personnel to the United States Army Medical Department is governed by the following letter of instruction sent out by the Adjutant General's Office to all corps area and department commanders on Jan. 21, 1942:

WAR DEPARTMENT
The Adjutant General's Office
Washington

January 21, 1942

Subject: Procurement of Officers for Medical Department, Army of the United States.

To: All Corps Area and Department Commanders.

1. Letter from this office dated Feb. 3, 1941, file AG381 (8-13-40) R-A, Subject: "Assistance of the American Medical Association in the classification and procurement of physicians for military service," is rescinded.

2. There has been established under the Office for Emergency Management, Office of Defense Health and Welfare Services, a Procurement and Assignment Service to coordinate the procurement of physicians, dentists and veterinarians for all governmental, industrial and civilian requirements.

3. In order to expedite appointments in the Medical Corps, Dental Corps and Veterinary Corps, Army of the United States, the following procedure will govern the processing of all applications:

(*a*) All individual inquiries for information concerning a commission or offers to serve as a medical, dental or veterinary officer should be acknowledged by the headquarters receiving the communication and the communication itself forwarded by indorsement to the Executive Officer, Procurement and Assignment Service, Office of Defense Health and Welfare Services, Social Security Building, Washington, D. C.

(*b*) The Procurement and Assignment Service will supply to individual applicants who are eligible and qualified for appointment the required forms (WD AGO Form No. 170, "Application for Appointment and Statement of preferences for Reserve Officers," in duplicate, and WD AGO Form No. 178 and 178-2, both in duplicate) together with a request on the surgeon of the nearest Army post for a final type physical examination. Each request for final types physical examination authorized by the Procurement and Assignment Service will be honored by surgeons of Army posts. Application forms and supporting papers, except the report of physical examination, will be returned by the applicant to the Procurement and Assignment Service; the report of physical examination (WD AGO Form No. 63) will be forwarded by the surgeon of the station at which the examination was conducted, direct to the Surgeon General.

(*c*) The completed applications and supporting papers, except report of physical examination, will be transmitted by the Procurement and Assignment Service to the Surgeon General together with a statement by that service derived from its files and regarding eligibility of the applicant for appointment in the Medical, Dental and Veterinary Corps, Army of the United States, as prescribed by current Army regulations. The Procurement and Assignment Service will also furnish the Surgeon General with the professional classification and evaluation of the applicant as determined from the recent nationwide survey made by the Committee on Medical Preparedness of the American Medical Association.

(*d*) The Surgeon General will forward such completed applications to the Adjutant General as prescribed in paragraph 10 (4), Army Regulations No. 605-10, and inform the Procurement and Assignment Service of action recommended.

4. No change in the present procedure for the appointment of graduates of medical units of the Reserve Officers' Training Corps in the Medical Corps Reserve or for appointment in the Army of the United States of physicians and dentists for affiliated units, of junior and senior students in medical schools in the Medical Administrative Corps, Army of the United States, or of graduates of such schools who are to be appointed in

the Medical Corps, Army of the United States, on graduation.

5. When the applications for appointment have been approved the Adjutant General will notify the applicant direct of his appointment with instructions as to proper completion of oath of office and finger print card and the return of such forms direct to the Adjutant General. When the oath of office has been received by the Adjutant General, the Surgeon General and the Executive Officer, Procurement and Assignment Service of the Office of Defense Health and Welfare Service, Office for Emergency Management, Washington, D. C., will be notified.

By order of the Secretary of War.

(Note: Address now 601 Pennsylvania Avenue N.W., Washington, D. C.)

In summary, the procedure is as follows:

1. The Surgeon General requisitions needed personnel from the Central Office of the Procurement and Assignment Service.

2. The National Roster prepares an appropriate list of names from the National Roster of Scientific and Specialized Personnel.

3. The National Roster sets aside the cards from the file of those available.

4. This list is forwarded to the Consultant Office, Procurement and Assignment Service.

5. The Consultant Office forwards the names to the chairmen of relevant state committees of the Producement and Assignment Service.

6. These chairmen forward to the central office the lists they received, with names of unavailable (essential) persons indicated.

7. The Central Office mails application forms and authority for physical examination to the qualified and available proposed applicants.

8. Each applicant applies for "final type" physical examination at the nearest Army post.

9. The examiner sends the report to the Surgeon General's Office.

10. The applicant returns his completed application blank and supporting papers direct to the Central Office of the Procurement and Assignment Service.

11. The central office forwards the application form and the supporting papers direct to the Surgeon General.

12. The Surgeon General's Office joins the completed application blank, supporting papers and the corresponding report of physical examination.

13. The Surgeon General's Office determines whether or not to recommend the applicant to the Adjutant General on the basis of physical and professional qualifications.

14. The Adjutant General notifies the applicant that he has or has not been appointed.

15. The Central Office of the Procurement and Assignment Service is notified whether the applicant has been, or has not been, appointed.

16. The names of those not commissioned are again placed in the file of the National Roster so that the persons affected may be available for other service.

Note.—After the applicant has sent his application form and supporting papers to the Central Office of the Procurement and Assignment Service, he may expect his further correspondence to be carried on with the Surgeon General's Office or the Adjutant General's Office.

PROVISION OF PHYSICIANS AND DENTISTS FOR THE UNITED STATES NAVY MEDICAL AND DENTAL CORPS

When a request is received from the United States Navy Medical or Dental Corps for personnel, the same procedure will be followed in securing lists of names as has already been described in the previous section regarding the provision of personnel for the Army. The lists of names received from the state chairman will then be forwarded by the Procurement and Assignment Service to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. The Bureau of Medicine and Surgery will then conduct negotiations with the physicians and dentists concerned through the commandants of their respective naval districts. Should a physician or dentist apply directly to a naval commandant for commission in the United States Naval Medical or Dental Corps, the procedure outlined in the following letter from the Bureau of Medicine and Surgery to the commandants of all naval districts, dated Feb. 3, 1942, prevails:

February 3, 1942.

From: The Chief of the Bureau of Medicine and Surgery.

To: The Commandant, All Naval Districts.

Subject: Status of Procurement and Assignment

Service for Physicians, Dentists and Veterinarians in connection with recruitment of medical and dental officers for the U. S. Naval Reserve.

1. The Secretary of the Navy has approved the recommendations of the Chief of the Bureau of Medicine and Surgery whereby the services of the "Procurement and Assignment Service, of the Defense Health and Welfare Services," an organization recently created by the President, may be utilized by the Navy in facilitating the recruitment of medical and dental officers for the U. S. Naval Reserve.

2. The primary function of the above mentioned service as pertains to the Navy is to furnish information which indicates certain applicants for appointment in the Medical and Dental Corps of the Naval Reserve either do or do not occupy positions in civil life which are considered essential to the national defense, to the proper functioning of medical and dental schools or whose acceptance of appointments in the Naval Reserve would jeopardize the health and welfare of a local community, such as removing the only qualified orthopedic surgeon from a community composed practically entirely of miners or workers in a factory producing materials essential to the government.

The furnishing of such information to the commandants, before investigation of an applicant, would be of distinct advantage in that the number of investigations would be materially reduced and, in the case of applicants considered essential or holding civilian appointments connected with national defense, need not be accomplished.

3. In this connection, the following procedure is suggested with the request that it be executed by the District Medical Officer on all applications received after Feb. 16, 1942:

(*a*) Whenever a physician or dentist makes application for appointment, four copies of the enclosed form are to be immediately filled out and the original and two copies forwarded to the Bureau of Medicine and Surgery. It is desired these forms be forwarded when the first contact is made in any given case, without waiting for the applicant to return his completed application.

(*b*) The Bureau of Medicine and Surgery will retain one copy and send the original and one copy to the Executive Secretary of the Procurement and Assignment Service.

(*c*) When the Executive Secretary of the Procurement and Assignment Service has placed his endorsement thereon, he will return both copies to the commandant concerned.

(*d*) If the candidate is not cleared, both copies should be forwarded by the commandant to the Bureau of Medicine and Surgery and the candidate informed by the commandant his application cannot be accepted in view of the action of the Procurement and Assignment Service. The Bureau of Medicine and Surgery will make the second endorsement, retain the original and forward the copy to the Executive Officer of the Procurement and Assignment Service.

(*e*) If the candidate is cleared, both the original and the copy of the form should be forwarded to the Bureau of Navigation with the application. After final action is taken the Bureau of Medicine and Surgery will make the second endorsement, retain the original and forward the copy to the Executive Officer of the Procurement and Assignment Service.

(*f*) About fifty copies of the form adaptable for this purpose are enclosed to serve as a sample of others to be mimeographed or printed locally.

Ross T. McIntire.

In summary, the procedures for Navy procurement are as follows:

1. The Bureau of Medicine and Surgery requisitions personnel from the central office of the Procurement and Assignment Service.

2. An appropriate list of names is prepared from the National Roster of Scientific and Specialized Personnel.

3. The National Roster sets aside the cards bearing these names from the file of those available.

4. The list is forwarded to the Consultant Office, Procurement and Assignment Service.

5. The Consultant Office forwards the names to the chairmen of relevant state committees of the Procurement and Assignment Service.

6. These chairmen forward to the central office the lists they received, with names of unavailable (essential) persons indicated.

7. The central office forwards the names of qualified and available persons to the Bureau of Medicine and Surgery.

8. The Bureau of Medicine and Surgery conducts the subsequent negotiations with the proposed applicants.

9. The Bureau of Medicine and Surgery notifies the central office of the Procurement and Assignment Service which applicants have been and which have not been appointed.

10. The names of those not commissioned are again placed in the file of the National Roster, so that the persons affected may be available for other services.

When an applicant applies directly to any Army installation for commission in the Army Medical or Dental or Veterinary Corps, he is referred to the Procurement and Assignment Service. When an applicant applies to any Naval Commandant for commission in the U. S. Medical or Dental Corps, his application is sent to the Bureau of Medicine and Surgery and such names are cleared through the Procurement and Assignment Service before the commissions are granted.

UNITED STATES PUBLIC HEALTH SERVICE

The Surgeon General of the United States Public Health Service has issued the following circular to all District Directors and Medical Officers in Charge concerning new appointment procedure for physicians and dentists:

February 14, 1942.

1. The Procurement and Assignment Service within the Office of Defense Health and Welfare Services has the responsibility for assisting in the procurement and assignment of physicians and dentists in such manner as to best serve the over-all health and medical needs of the country. It is essential that the personnel policy of the Public Health Service be consistent with the major purposes of the Procurement and Assignment Service.

2. It is desired that applications be solicited from qualified physicians and dentists for commission in the reserve corps of the U. S. Public Health Service. The expansion of the reserve corps of the Public Health Service is necessary to serve two major purposes:

(*a*) The creation of a pool of qualified public health personnel to safeguard essential civilian health services and at the same time to be available for immediate, though temporary, active duty in the event of some major public health emergency.

(*b*) The procurement of sufficient numbers of qualified physicians and dentists to enable the Public Health Service to carry on its normal and war-time activities.

3. In order to serve these two major purposes, it will be necessary to recruit into the reserve of the Public Health Service physicians and dentists who come within the two following categories:

(*a*) Those who are now engaged in public health work and who by reason of special training and experience occupy strategic positions in their present civilian capacities. Such personnel would be expected to remain on inactive status with the Public Health Service, except in the event of a major disaster, in which case they would be subject to immediate, though temporary, active duty.

(*b*) Those who are professionally qualified and also available for immediate active duty in the Public Health Service for such periods of time as the exigencies of the service may determine.

4. Applications from physicians and dentists relating to commissions in the reserve of the Public Health Service will be processed in the following manner: On receipt of an application by the office of the Surgeon General, the application forms and all supporting papers, including the report of physical examination, will be transmitted with a definite recommendation of the Surgeon General to the Procurement and Assignment Service. The Procurement and Assignment Service will in turn certify to the Surgeon General as to the availability of the individual for appointment. In the case of public health personnel occupying strategic positions in civilian posts, the criterion of availability for commission would rest largely upon the fact that the individual occupies a strategic position, and therefore should remain as long as practicable on an inactive status. In the case of personnel to be called to immediate active duty, the criterion of availability would be based upon the ability of the community to spare the services of the individual. Upon receipt from the Procurement and Assignment Service of notice of clearance, indicating that the applicant is available for a commission in the reserve of the Public Health Service, the appointment will be completed in the usual manner.

5. The above procedure does not apply to the recruiting of individuals for the regular corps of the Public Health Service, or to the appointment of interns or doctors certified by the Civil Service Commission, or to the appointment of sanitary engineer officers in the reserve.

6. When the Public Health Service is without acceptable applications from physicians and dentists for filling vacancies, the Surgeon General will request the Procurement and Assignment Service for the names and qualifications of persons available to fill such vacancies. When decision has been reached as to the selection or nonselection of such persons, the Surgeon General will advise the Procurement and Assignment Service.

7. The Procurement and Assignment Service has given its endorsement to the procedure outlined above.

Thomas Parran,
Surgeon General.

Approved:
Paul V. McNutt,
Administrator.

On January 28, 1942, the following memorandum (I-363) was released by the Director of Selective Service to all state directors of the Selective Service System.

OCCUPATIONAL DEFERMENTS OF MEDICAL DOCTORS, DENTISTS AND DOCTORS OF VETERINARY MEDICINE

Information previously distributed by this headquarters clearly indicates an overall shortage of medical doctors, dentists and doctors of veterinary medicine in the nation. Since war was declared, the shortage of these professional men has become acute. It is now manifest that every qualified doctor, dentist and veterinarian must serve where he can render the greatest professional service to the nation.

In order to accomplish this purpose, the President, by Executive Order, has formed the Procurement and Assignment Service, under the Office of Defense Health and Welfare Services. This Service was formed primarily for the purpose of gathering and making available information with respect to the supply of qualified practitioners in the field of medicine, dentistry and veterinary medicine, with a view of securing the most effective allocation of medical manpower as indicated by the requirements of the armed forces, civilian needs and industrial medicine.

To work with the headquarters of this Service in Washington, there is being organized a committee for each Corps Area in the Continental United States. Each committee will consist of five doctors, two dentists and one veterinarian. The committees have been accepted as advisers to the nine Corps Area Surgeons, to the Naval District Surgeons and to the Regional Medical Officers of the Office of Civilian Defense and will operate not only through the subdivisions of the medical, dental and veterinary association but also with the profession at large in securing information and giving advice.

When considering the classification of any registrant who is a qualified medical doctor, dentist, or doctor of veterinary medicine, the Director of Selective Service desires that local boards, through the State Director, shall consult the Procurement and Assignment Committee of the Corps Area for information as to the availability of qualified medical doctors, dentists and doctors of veterinary medicine in the community. This information shall be considered by the local board in determining the registrant's classification. The Executive Order referred to in no way affects the authority of the Selective Service System to classify registrants. The procedure has been established for the purpose of making such information available to local boards.

For the convenience of the State Director and the local boards, the names and addresses of the Chairmen of the Nine Corps area committees of the Procurement and Assignment Service are listed:

First Corps Area: Dr. W. G. Phippen, Salem, Mass.

Second Corps Area: Dr. A. W. Booth, Elmira, N. Y.

Third Corps Area: Dr. A. M. Shipley, Baltimore, Md.

Fourth Corps Area: Dr. Edgar Greene, Atlanta, Ga.

Fifth Corps Area: Dr. E. L. Henderson, Louisville, Ky.

Sixth Corps Area: Dr. Charles H. Phifer, Chicago, Ill.

Seventh Corps Area: Dr. Roy W. Fouts, Omaha, Neb.

Eighth Corps Area: Dr. Sam E. Thompson, Kerrville, Texas.

Ninth Corps Area: Dr. Charles A. Dukes, Oakland, Calif.

Lewis B. Hershey, Director

DEFERMENTS FOR STUDENTS

The Secretary of the Navy recently approved a change in Navy regulations whereby it is now possible for persons who have been accepted for entrance in the next entering class and all medical students in class A medical colleges and approved dental colleges to be appointed in the United States Naval Reserve with the commission Ensign H-V (P), provided they meet the physical and other requirements for such appointment. It should be noted that this applies not only for persons holding letters of acceptance and freshmen and sophomore students in these medical and dental schools but also juniors and seniors.

The Secretary of War has recently approved a change in Army Regulations which authorizes the commission as Second Lieutenant, Medical Administrative Corps, Army of the United States, of all students in class A medical colleges and to those persons who have matriculated in these colleges, providing they meet the physical and other requirements for such appointment. It should be noted that this opportunity includes freshmen and sophomores as well as juniors and seniors.

For commission in the Navy, application forms may be obtained from the dean's office or from some one designated by him, or from the commandant of the naval district in which the applicant resides. Further information may be obtained from the office of the commandant of any naval district.

For commission in the Army, applications should be made through the office of the dean to the corps area surgeon of the corps area in which the applicant resides.

Students of the Medical Reserve Officers' Training Corps should continue as before, with a view of obtaining commissions as First Lieutenant, Medical Reserve Corps, on graduation.

Students who hold commissions come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service acts. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education.

All students who are disqualified physically for commissions should apply for deferment in accordance with the instructions already referred to.

RECENT GRADUATES

After successful completion of his medical college course every individual holding commission as Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States Army, Washington, D. C., for appointment as First Lieutenant, Medical or Dental Corps, Army of the United States. Every individual holding commission as Ensign H-V (P), U. S. Naval Reserve, should make immediate application to the commandant of his naval district for commission as Lieutenant (j. g.), Medical or Dental Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant (j. g.) in the regular Medical Corps or Dental Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

The Public Health Service contacts senior and junior medical students for the purpose of interesting the students in applying for positions as interns, following the successful completion of the school year. In addition the students that are accepted are offered commissions in the reserve, to be inactive during the period of their internship and to become active following the successful completion of their internship.

TWELVE MONTHS INTERNS

All interns should apply for commissions as First Lieutenant, Medical or Dental Corps, Army of the United States, or as Lieutenant (j. g.), United States Navy or Naval Reserve. After completion of twelve months' internship, except in rare instances in which the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as medical or dental officers.

HOSPITAL STAFF MEMBERS

Interns with more than twelve months of internship, assistant residents, fellows, residents,

junior staff members and staff members under the age of 45 fall within the provisions of the Selective Service acts.

All such men holding Army commissions are subject to call at any time. Temporary deferment is possible if an application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable is approved.

All such men holding Naval Reserve commissions are subject to call at any time, at the discretion of the Secretary of the Navy. Temporary deferments are granted only on approval of applications made by the institution to the Surgeon General of the Navy.

THOSE UNDER 45

All male physicians, dentists or veterinarians under 45 are liable for military service. That their services may be utilized in a professional capacity as officers, they should be made available through the facilities of the Procurement and Assignment Service. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, if necessary, by (*a*) those who are over 45, (*b*) those under 45 who are physically disqualified for military service, (*c*) women and (*d*) instructors and those engaged in research who do not possess M.D., D.D.S. or D.V.M. degrees but whose utilization would make available physicians, dentists or veterinarians for military service.

THOSE OVER 45

All physicians, dentists or veterinarians over 45 should enroll with the Procurement and Assignment Service. Every possible effort will be made to retain those who are essential in their present capacities. Those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those agencies.

MAINTAINING EDUCATIONAL, INDUSTRIAL AND CIVILIAN MEDICAL, DENTAL AND VETERINARY SERVICES

Faculties of Schools.—Authorities in medical, dental and veterinary schools have forwarded lists to the Procurement and Assignment Service containing the names of members of their faculties who are considered essential to a proper continuation of medical, dental and veterinary education. These lists will be consulted in determining those who are considered essential. Should the status of any individual listed as essential for teaching be changed, the Procurement and Assignment Service should be immediately notified by the college authorities.

Research.—The burden of proof as to the essential character of research set forth as a reason for deferment rests on the individual and the employing institution. Efforts will be made to maintain without interruption the progress of scientific research, particularly that related to the war effort.

Civil Practice.—The Procurement and Assignment Service will do its utmost to maintain a supply of medical, dental and veterinary services for all industrial and civilian needs. Already the state and county medical, dental and veterinary societies, under the direction of state chairmen, are assembling lists of physicians, dentists and veterinarians considered essential in the positions they now occupy.

ADVISORY COMMITTEES AND LIAISON OFFICERS

On recommendations of the Directing Board of the Procurement and Assignment Service, the Office of Defense, Health and Welfare Services has appointed the following advisory committees and consultants to the Procurement and Assignment Service: Dentistry, Veterinary Medicine, Hospitals, Women Physicians, Industrial Health and Medicine, Medical Education, Negro Physicians and Public Health.

These committees are advisory to the Directing Board in establishing policies regarding the availability and utilization of personnel in their respective fields.

THE COMMITTEE ON INFORMATION

With its consultants, the Committee on Information is charged with disseminating information to all physicians, dentists and veterinarians and to the public in order that they may be kept informed of the progress of the Procurement and Assignment Service, and in order to secure their cooperation in its activities.

LIAISON OFFICERS

Each of the governmental agencies utilizing the services of physicians, dentists and veter-

inarians has appointed a liaison officer to advise and assist the Procurement and Assignment Service.

SPECIAL INFORMATION

Specialization.—In general, determination as to special qualifiations of persons entering the medical services of the Army and Navy depends on the classification of specialists by advisory committees established through the Division of Medical Sciences of the National Research Council and certifications of boards in the various specialties. Moreover, the recommendations of state and county committees and the statements, of the individuals on questionnaires will be taken into consideration. On questions of dental and veterinary specialization, the official organization will be consulted.

Citizenship.—Regulations of the United States Army and Navy do not permit the commissioning of officers who are not citizens of the United States. A commission in the United States Navy requires full citizenship for a period of ten years, and the ten year period to have been spent in the United States. Similarly, all federal agencies utilizing physicians, dentists and veterinarians now demand citizenship as a prerequisite to such enrollment.

Persons who do not possess full citizenship papers but who have been licensed to practice in any of the states of the United States should enroll with the Procurement and Assignment Service so that their services may be utilized when the opportunity arises. They should, however, do their utmost to continue in their efforts to secure citizenship to enable them to qualify for positions that they are not able to fill because of lack of these essentials.

Physicians, dentists or veterinarians who have their first citizenship papers but who do not have a license to practice and who are under the age of 45 come within the provisions of the Selective Service acts and may be inducted in the capacity of enlisted men. When this occurs, these should make known their special capacities, so that their services may be utilized to the fullest extent in the medical departments of the Army and Navy in an enlisted capacity.

College Qualifications.—Commissions in the medical departments of the United States Army and Navy and in federal agencies are granted only to graduates of schools recognized by such agencies. For physicians, twelve months of internship or its equivalent is required.

Those wishing further information concerning the qualifications necessary to appear for examination leading to a commission in the Army or Navy or to service with any other governmental service should apply directly to such agency.

Women Physicians, Dentists and Veterinarians.—The United States Army and Navy do not permit the commissioning of women physicians, dentists or veterinarians. However, all should enroll with the Procurement and Assignment Service so that they may be recommended to such positions as are available in other federal agencies, industry or civilian capacities in which their services may be required.

The needs will no doubt be particularly acute in local, state and national institutions, in teaching and staff positions and in special occupations with the Office of Civilian Defense in the care of women and children under emergency conditions.

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PHYSICIANS NEEDED IN THE PANAMA CANAL ZONE

Physicians are urgently needed at the Panama Canal — one of the nation's most vital defense areas. There is a splendid opportunity here for doctors to assist their country during the present emergency.

The U. S. Civil Service Commission has just announced an examination to secure physicians for these important positions. The entrance salary is $4,000 a year, and free transportation by boat or plane is furnished from port of embarkation, the salary beginning on the date of departure from the United States. Applications will be accepted by the Commission in Washington, D. C., until further notice. There is no written test.

Applicants must have been graduated from a Class A medical school with a degree of M.D. subsequent to May 1, 1920, and, in addition, must have had at least 1 year of experience in a hospital since graduation. Graduates from schools which require the completion of the internship before granting the M.D. degree (five-year schools) will be regarded as having met the hospital experience requirement. Applicants must not have passed their fiftieth birthday; however, because of the arduous duties in

the tropical climate, applicants between 25 and 35 years of age are preferred.

Applicants must be in sound physical health; they must be active and capable of arduous work. Although appointees are required to pass a thorough medical examination, the physical requirements are not as high as for the army or navy service.

The duties of the position are to serve as District Physician in a small Government dispensary; have general supervision over all medical and surgical activities in the dispensary; operate a general medical and surgical clinic; examine persons entering The Panama Canal Service; visit patients day or night in their homes and on board ship; and to be in charge of business activities of the dispensary.

Further information is given in the announcements which may be obtained, with application forms, at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington, D. C.

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UNITED STATES CIVIL SERVICE EXAMINATION

GRADUATE NURSE

Optional Branches

1. General Staff Duty
2. Psychiatry

Panama Canal Service Only

Applications will be rated as soon as practicable after receipt at the U. S. Civil Service Commission, Washington, D. C., and certification made as the needs of the service require. When sufficient eligibles are obtained, the receipt of applications will be closed, in which case due notice will be given.

The United States Civil Service Commission hereby amends Announcement No. 142 of 1941 to substitute the following paragraph for the first paragraph in the section "Salaries and deductions for subsistence and quarters:"

"Salaries and deductions for subsistence and quarters. — The entrance salary for nurses is $168.75 per month. Promotion may be made at the end of the quarter following the first 18 months of service to $175.00 per month, at the end of the quarter of the succeeding 18 months of service to $181.25 and thereafter at such intervals and in such amounts until a maximum rate of $206.25 is reached, depending upon effective work performance. Such increases come within the terms of the general administrative promotion plan for positions within the scope of the Classification Act of 1923 as amended."

Further information regarding this examination is contained in the original announcement.

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ORTHOPEDIC MECHANIC POSITIONS OPEN IN GOVERNMENT SERVICE

An examination has been announced by the Federal Civil Service Commission to secure Orthopedic Mechanics for the Army services. The salary is $2,000 a year. Persons may qualify under the following optional subjects: (1) General, (2) Bracemaker, (3) Shoemaker and Leatherworker, and (4) Limbmaker. Because of the demand for qualified eligibles, applications will be accepted at the Civil Service Commission's Washington office until further public notice.

Persons appointed will construct, design, alter, and repair orthopedic appliances as indicated by the optional subjects. This includes working from living models and plaster casts, doing nickel plating, and shaping, grinding, and polishing metals used in orthopedic appliances.

Applicants will not take a written test but will be rated on the extent and quality of their experience. They must have had 5 years of appropriate experience in orthopedic work within the past 10 years. Under the option "Shoemaker and Leatherworker" persons whose experience has been in general shoe repair will not be considered qualified.

Examination announcements and application forms may be obtained at first- and second-class post offices and from the Civil Service Commission, Washington, D. C.

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We must recognize the fact that tuberculosis begins in the human body when the tubercle bacillus is first lodged in the tissues and that whatever occurs subquent to this is largely beyond our control. The disease may be interrupted permanently by the body's defense mechanism soon after it begins; it may be interrupted temporarily on numerous occasions but eventually may reach its ultimate goal by destroying parts or even the life of the body. J. A. Myers, M.D., Ann'l Meeting, Nat'l Tuber. Assn., 1940.

Original Articles

ABNORMALITIES OF INTRAUTERINE ENVIRONMENT ASSOCIATED WITH 2000 FETAL AND NEONATAL DEATHS*

EDITH L. POTTER, M.D., Ph.D.
CHICAGO

An account of the pathologic lesions found at the postmortem examination of 2000 fetuses who were stillborn and infants who died during the first month of life has recently been published from this department and included with it was a brief survey of some of the obstetric factors associated with the birth of these babies.[1] I propose in this paper to deal in detail with abnormalities of the fetal environment and to include the various complications and conditions found in the mother and the fetal adnexa (cord and placenta) which were responsible for, contributed to, or were coincidental with the death of the fetuses and infants.

The source of the material and the methods used in its preparation have been described in the previous publication and will not be repeated.[1] The study is based on the maternal histories and the postmortem examinations of 2000 dead fetuses and infants. Included were 652 (32.6%) who died before the onset of labor, 553 (27.6%) who died during labor, and 795 (39.8%) who were born alive but died at less than one month of age. They were divided according to length of gestation into those born as previable[(a)] 410 (20.5%), as viable premature[(b)] 752 (37.6%) and as term infants 838 (41.9%).

It was possible to demonstrate pathologic lesions indicative of a probable cause of death in 1130 (56.5%). The less advanced the period of gestation at which an infant is delivered, or the longer a fetus has been dead in utero before delivery, the greater is the probability that no abnormalities will be found. Among those who were delivered in the previable period and who were dead before the onset of labor a cause of death could be found at autopsy in only 20 per cent, while at the opposite end of the scale were those delivered at term who died after birth, and in these a cause of death could be demonstrated in 87 per cent.

Since examination of the body of the fetus or infant discloses the reasons for its failure to survive only slightly more than half the time, an investigation of the environment in which it developed and the conditions which surrounded its birth are essential to a complete understanding of the reasons for its death. Unfortunately even with this added information we still have no explanation to offer for approximately one-fifth of all fatalities (21.6%). One or more abnormalities consisting of disturbances in the health of the mother, of interference with circulation through the placenta or umbilical cord, or of pathologic states developing incident to labor or

From the Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-in Hospital.

*Assistance in the preparation of these materials was furnished by the personnel of Work Projects Administration Official Project No. O.P.665-54-3-387.

(a) Two of the three following criteria: weight from 400 to 999 gm., length from 22.1 to 35 cm., menstrual age 22 through 28 weeks. This division is an arbitrary one used since the Illinois law requires the reporting of all still-births in which the fetus is advanced to the fifth month of gestation. This group includes those fetuses and infants which must be reported and considered as deaths but in which the infant practically never survives after birth.

(b) Two of the three following criteria: weight from 1000 to 2499 gm., length from 35.1 to 47 cm., menstrual age 29 through 37 weeks. Infants and fetuses falling in this group are hereafter referred to only as "premature."

delivery were found 1006 times.* These occurred in association with 335 (51.3%) of the antepartum deaths, 340 (61.4%) of the intrapartum deaths, and 331 (41.6%) of the neonatal deaths. They were found when delivery took place during the previable period in 201 (49.0%) cases, the premature period in 402 (53.4%) and at term in 403 (48.0%). It is thus evident that there is no appreciable excess of environmental abnormalities associated with death at any particular gestational age (after the period when the birth of the fetus must be reported) or with its occurrence at any special time in relation to the process of birth.

Since there were 138 infants in whose environment more than one disturbance existed, the presentation of our data must take this into account. Each individual case was carefully studied and the complication which seemed of most importance in relation to the fatal outcome was chosen. (Table I) The figures used in all discussions pertaining to method of delivery and pathologic lesions in the infants include only one complication for each infant and total 1006. In the general figures showing the occurrence of these environmental states in relation to gestational age and time of death it seemed that a more accurate picture could be obtained by including all of the complications so that in these figures the total is 1144.

Table I

Abnormalities Present in the Intrauterine Environment of 1006 Fetuses and Infants

	Total Complications	Most Important Complications
Toxemia	253	215
Hemorrhage		
Abruptio placentae	151	152
Placenta previa	101	99
Nonspecific hemorrhage	59	55
Cord abnormalities		
Prolapse	61	48
Entanglements	74	62
Medical complications		
Syphilis	72	57
Other diseases unrelated to pregnancy	91	82
Conditions leading to abnormal labor or difficult delivery	93	91
Miscellaneous	189	145
Total	1144	1006

*Prolongation of labor without statement as to cause was not included. Length of labor is discussed near the end of the paper.

TOXEMIA

Toxemia in the mother was the complication most commonly observed and was present in 253 or 12.7 per cent of the total group. Dieckmann[2] finds a 7 per cent incidence of toxemia among the patients delivered at the Chicago Lying-in Hospital and since this figure is necessarily higher than it would be for non-hospitalized individuals, the incidence of 12.7 per cent must be well over twice that which occurs among all pregnant women. Included in this general category in the present study were simple toxemia (the majority being pre-eclampsia), 195, eclampsia 21, hypertension alone 30, hyperemesis gravidarum 7.

The incidence of pre-eclamptic toxemia is approximately the same at all gestational ages after the fifth month of gestation and was present in association with death during the previable period in 8.5 per cent (35), the premature period in 11.9 per cent (90), and at term in 8.3 per cent (70): a far greater actual number occurred among both premature and term infants than among the previables. (Table II) The incidence in relation to the time of death is 14.5 per cent (95) in the antepartum period, 6.1 per cent (34) in the intrapartum period and 8.3 per cent (66) in the neonatal period. (Table III)

The frequency of eclampsia was approximately the same in stillborn and liveborn infants. Among antepartum deaths it was 1.5 per cent (10), intrapartum 0.75 per cent (4) and neonatal deaths .88 per cent (7). It was also much the same at all periods of gestation; among those dying in the previable period it was 1.2 per cent (5), in the premature period 1.0 per cent (9), and in those at term 0.92 per cent (7). Among the thirty deaths in which maternal hypertension alone was recorded, only one was in a previable fetus and the other 29 were almost equally divided between term and premature infants. This suggests that if hypertension alone plays a part in producing fetal death it is most apt to be effective toward the end of pregnancy. Hyperemesis was not stated to have occurred in any of the women whose infants died at term; two deaths were in the previable period and five in the premature period.

Table II
Incidence of Environmental Abnormalities in Relation to Total Number of Infants and Fetuses Delivered at Different Periods of Gestation

	Previable		Premature		Term		Total	
	No.	%	No.	%	No.	%	No.	%
Toxemia	42	10.2	118	16.0	93	11.0	253	12.7
Hemorrhage								
Abruptio placentae	33	8.0	69	9.0	49	5.8	151	7.5
Placenta previa	21	5.1	65	8.6	15	1.7	101	5.0
Nonspecific hemorrhage	25	6.1	21	2.8	13	1.5	59	3.0
Cord abnormalities								
Prolapse	4	1.0	23	3.1	34	4.0	61	3.1
Entanglements	4	1.0	19	2.5	51	6.0	74	3.7
Medical complications								
Syphilis	12	2.9	29	3.8	31	3.7	72	3.6
Other diseases unrelated to pregnancy	25	6.1	38	5.0	28	3.4	91	4.5
Conditions leading to abnormal labor or difficult delivery	0	0	17	2.2	76	9.0	93	4.7
Miscellaneous	50	12.2	66	8.7	73	8.7	189	9.4
Total	216	52.6	465	61.7	463	54.8	1144	57.2
No environmental abnormalities	194	47.4	288	38.3	375	45.2	856	42.8
Total cases	410	100	752	100	838	100	2000	100

Table III
Incidence of Environmental Abnormalities in Relation to Time of Death in Total Number of Infants and Fetuses

	Antepartum Deaths		Intrapartum Deaths		Neonatal Deaths		Total	
	No.	%	No.	%	No.	%	No.	%
Toxemia	119	18.2	44	7.9	90	11.3	253	12.7
Hemorrhage								
Abruptio placentae	67	10.3	60	10.6	24	3.0	151	7.5
Placenta previa	16	2.4	32	5.8	53	6.7	101	5.0
Nonspecific hemorrhage	14	2.1	13	2.3	32	4.0	59	3.0
Cord abnormalities								
Prolapse	7	1.1	44	7.9	10	1.3	61	3.1
Entanglements	35	5.4	32	5.8	7	0.8	74	3.7
Medical complications								
Syphilis	38	5.8	17	3.1	17	2.1	72	3.6
Other diseases unrelated to pregnancy	26	3.9	24	4.3	41	5.3	91	4.5
Conditions leading to abnormal labor or difficult delivery	0	0	57	10.3	36	4.5	93	4.7
Miscellaneous	45	6.9	68	12.3	76	9.6	189	9.4
Total	367	56.1	391	70.3	386	48.6	1144	57.2
No environmental abnormalities	285	43.9	162	29.7	409	51.4	856	100
Total cases	652	100.	553	100.	795	100.	2000	100.

The method of delivery was, in the majority of instances, apparently not altered by the presence of a toxemia. Natural cephalic and breech deliveries and versions and extraction each show a three per cent lower incidence than is found in the entire group (Table IV); forceps deliveries are about the same; delivery by Cesarean section, however, occurred in 12.5 per cent of all toxemic patients in contrast to 5.0 per cent in the entire group. The incidence of Cesarean sections is exceeded only in those women suffering from placenta previa and abruptio placentae.

Table IV
Method of Delivery in Relation to Abnormalities of Fetal Environment

	Natural Cephalic		Breech		Low Forceps		Mid or High Forceps		Version & Extraction		Cesarean Section		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Toxemia	122	56.5	28	13.0	17	7.7	7	3.2	2	0.9	27	12.5	12	5.5	215	100
Abruptio Placentae	78	51.4	24	15.7	5	3.3	3	1.9	10	6.5	23	15.1	9	5.9	152	100
Placenta Previa	27	27.3	13	13.1	3	3.0	1	1.0	18	18.2	20	20.2	17	17.2	99	100
Minor hemorrhage and cord entanglements	70	59.6	27	23.2	10	8.6	2	1.7	0		0		8	6.9	117	100
Cord prolapse	13	27.0	12	25.0	4	8.3	3	6.3	7	14.6	0		9	18.7	48	100
Syphilis	44	77.5	8	13.8	1	1.7	1	1.7					3	5.3	57	100
Diseases unrelated to pregnancy	47	60.8	12	13.6	3	3.3	5	5.6	1	1.1	5	5.6	9	10.0	82	100
Conditions leading to abnormal labor or difficult delivery	15	16.4	12	13.1	13	14.2	21	23.0	6	6.6	12	13.1	12	13.1	91	100
Miscellaneous	103	70.8	11	7.6	8	5.5	4	2.7	6	4.1	3	2.5	10	6.8	145	100
No environmental abnormalities	667	66.8	179	18.2	69	7.0	15	1.5	24	2.3	10	1.0	31	3.2	994	100
Total	1185	59.2	326	16.3	133	6.7	62	3.1	74	3.7	100	5.0	120	6.0	2000	100

Table V
Incidence of Pathologic States Found at Autopsy in Relation to Environmental Abnormalities

	No Abnormalities		Traumatic Hemorrhage		Asphyxial Hemorrhage		Malformations		Miscellaneous		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Toxemia	120	55.8	28	13.0	30	13.9	14	6.5	38	10.8	215	100
Abruptio placentae	46	30.3	13	8.5	80	52.7	4	2.6	9	5.9	152	
Placenta previa	44	44.4	15	15.1	26	26.3	2	2.0	12	12.2	99	
Minor hemorrhage and cord entanglements	64	54.8	10	8.5	24	20.5	9	7.7	10	8.5	48	
Prolapsed cord	11	22.9	12	25.0	22	46.0	1	2.1	2	1.4	117	
Syphilis	24	41.4	5	8.6	5	8.6	0	0	23	41.4	82	
Diseases unrelated to pregnancy	43	49.4	14	17.2	10	11.5	7	8.2	8	13.7	91	
Conditions leading to abnormal labor or difficult delivery	18	20.0	37	41.2	17	18.9	6	6.6	13	13.3	57	
Miscellaneous	57	39.5	2	1.4	22	15.1	25	17.2	39	26.8	145	
No complications	443	44.3	138	13.8	142	14.2	141	14.1	130	13.0	994	100
Total	870	43.5	274	13.7	378	18.9	209	10.4	269	13.5	2000	

Pathologic lesions in the infants. No abnormalities were demonstrable in 120 (55.8%) (Table V) of the fetuses and infants, but only 13 of these were nonmacerated and at term. Intracranial or other hemorrhage was present in 28 (13.0%) although 3 died before the onset of labor and in these birth trauma could not have been a cause of death. Thirty (13.9%) exhibited petechial hemorrhages in the viscera and were believed to have died of asphyxia.* Six of these died after birth, but in only two was respiration established. Malformations were present in 14 (6.6%) infants, a considerably lower incidence than was found in the entire series (10.3%). It is impossible to determine which of the fetuses and infants succumbed directly as a result of the toxemia and which died coincidentally. Unfortunately toxemia produces no recognizable changes in the fetal tissues and it is too often concluded that the presence of such a condition is the cause of the fatal outcome. Actually only a small percentage of the

*In this paper "asphyxia" is used to mean a condition in the fetus resulting from oxygen deprivation caused by obstruction to the umbilical circulation.

Table VI
Incidence of Environmental Abnormalities in Relation to Pathologic Conditions Found at Autopsy

	No Abnormalities		Traumatic Hemorrhage		Asphyxial Hemorrhage		Malformations		Miscellaneous		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Toxemia	120	13.7	28	10.2	30	7.9	14	6.6	38	8.5	215	
Abruptio placentae	46	5.3	13	4.7	80	21.0	4	1.9	9	3.3	152	
Placenta previa	44	5.0	15	5.5	26	6.8	2	1.0	12	4.4	99	
Minor hemorrhage and cord entanglements	64	7.3	10	3.6	24	6.3	9	4.3	10	3.6	48	
Prolapsed cord	11	1.3	12	4.4	22	5.7	1	0.5	2	0.7	117	
Syphilis	24	2.7	5	1.8	5	1.3	0	0	23	8.3	82	
Diseases unrelated to pregnancy	43	4.9	14	5.1	10	2.6	7	3.4	8	2.9	91	
Conditions leading to abnormal labor or difficult delivery	18	2.1	37	13.5	17	4.4	6	2.9	13	4.8	57	
Miscellaneous	57	6.8	2	0.7	22	6.6	25	11.9	39	14.4	145	
No complications	443	50.9	138	50.4	142	37.4	141	67.5	130	49.1	994	
Total	870	100.0	274	100.0	378	100.0	209	100.0	269	100.0	2000	100

offspring of toxemic mothers fail to survive, and in any group of dead fetuses and infants there is always a larger number who are born of nontoxemic than toxemic mothers in whom no abnormalities can be demonstrated. In this study among the 967 fetuses and infants in whom no environmental abnormalities were present, 433 failed to show demonstrable pathologic lesions. It does not seem justifiable to state that an infant succumbed from maternal toxemia only because this condition was present and no specific cause of death could be found.

Maternal toxemia of some type was associated with 13.7 per cent (120) of the infants and fetuses showing no abnormalities at autopsy (Table VI). It was present in 10.2 per cent (28) of those having traumatic hemorrhage, 7.9 per cent (30) of those showing evidence of asphyxia, 6.6 per cent (14) of those with malformations, and 8.5 per cent (23) of those with miscellaneous conditions.

HEMORRHAGE

Some form of maternal hemorrhage occurred in association with 311 deaths. In 151 the hemorrhage was due to premature detachment of the placenta, in 101 to placenta previa, and in 59 to an unknown cause.

Premature Detachment of the Placenta.

Among the 151 infants and fetuses who succumbed following premature detachment of the placenta there was an 8.0 per cent (33) incidence among previable infants, 9.0 per cent (69) among premature and 5.8 per cent (49) among those at term. The incidence was 10.3 per cent (67) in those who died before the onset of labor, 10.6 per cent (60) in those who died during labor, and 3.0 per cent (24) in those who died after birth.

Method of delivery. Labor was terminated by natural cephalic delivery in 51.4 per cent (78) of the cases in which premature detachment of the placenta took place, a proportion almost as high as in the total group (59.4%); by breech delivery in 15.7 per cent (24); low forceps 3.3 per cent (5), mid or high forceps 1.9 per cent (3), version and extraction 6.5 per cent (10), Cesarean section 15.1 per cent (23), and other forms of delivery 5.9 per cent (9). The incidence of Cesarean section is three times as great as in the total group and accounts for almost one-fourth (23.0%) of all deliveries by this method. Only the incidence of Cesarean section performed in association with placenta previa exceeds that for premature placental detachment. The incidence of version and extraction is twice as great as in the entire group.

Pathologic lesions in the infants. No demonstrable abnormalities were present in 30.3 per cent (46) of the infants and fetuses dying in association with premature detachment of the placenta. Over one-half, 52.7 per cent (80), as would be anticipated, exhibited definite evidence of an interrupted circulation in the form of petechial hemorrhages. The incidence of traumatic hemorrhage, 8.5 per cent (13), is as low as in any group indicating that whatever steps may have been instituted for the control

of hemorrhage or the delivery of the infant, did not, in the majority of cases, produce injury. The incidence of malformations, 2.6 per cent (4), and miscellaneous conditions, 5.9 per cent (9), are also proportionately low.

Premature detachment of the placenta was present in association with 5.3 per cent (46) of the cases in which no abnormalities were found in the infant or fetus at autopsy, 4.7 per cent (13) of those with traumatic hemorrhage, 1.9 per cent (4) of those with malformations, and was highest, 21.0 per cent (80), in those showing evidence of asphyxia.

Placenta Previa.

Placenta previa was the third most common individual complication which was found in this study. It occurred in 101 or 5.0 per cent of the total cases. In association with those delivered in the previable period it was 5.1 per cent (21), premature 8.6 per cent (65), term 1.7 per cent (15), the incidence being considerably higher among the previable and premature infants than in those at term. This would indicate that symptoms from placenta previa usually occur during the latter months of pregnancy but before the normal end of gestation. It was associated with death in the antepartum period in 2.4 per cent (16) of all fetuses dying at this time, in 5.8 per cent (32) in the intrapartum period, in 6.7 per cent (53) in the neonatal period.

According to Davis,[3] at the Chicago Lying-in Hospital the incidence of placenta previa in the last four years has been 1:102 or practically one per cent of all patients delivered. The incidence in this study is 1:20 or almost five times that found in the total group of hospital deliveries. Other clinics in the United States report an incidence of placenta previa varying from 1:92 to 1:159. The death rate including all fetuses stillborn or infants dying after birth whose weight exceeded 400 grams at the Chicago Lying-in Hospital is 40 per cent in 122 consecutive cases of placenta previa. It is interesting to note that in the Lying-in Hospital study although 55 infants were at term only 5 of this group died or were stillborn (9.0%) while among the 67 previable and premature infants, 43 died or were stillborn (64.2%).

Type of Delivery. In the present series only 27.3 per cent of the fetuses and infants born of the mothers in whom this complication was present were delivered naturally with a cephalic presentation. This is less than half the number of such deliveries in the entire group. Breech deliveries were only slightly less frequent than in the entire group (13.1%) but low forceps were applied only half as often (3.0%) and mid or high forceps only one-third as commonly (1.0%). Version and extraction, however, is over five times (18.2%), and Cesarean section four times (20.2%) as common as in the entire group. One-fourth of all verisions and extractions and one-fifth of all Cesarean sections are found in association with placenta previa.

Pathologic lesions in the infants. Among the infants born of mothers with placenta previa 44.4 per cent showed no abnormalities at postmortem examination, 15.1 per cent had traumatic hemorrhage, 26.3 per cent had evidence of asphyxia, 12.2 per cent miscellaneous conditions and only 2.0 per cent had malformations. Of the infants showing no abnormalities 5 per cent were associated with placenta previa in the mother; of those with intracranial and other hemorrhages 5.5 per cent, evidence of asphyxia 6.8 per cent, malformations only 1 per cent and of those with miscellaneous conditions 4.4 per cent were born of mothers with placenta previa.

The incidence of placenta previa is much the same in association with the various pathologic lesions found in the entire group of infants, with the exception of a slightly increased rate among those with asphyxia and and unusual decrease in those with malformations. In view of Greenhill's[4] statement that malformations are much more common in association with placenta previa than with normal placental implantation and his conclusions that placenta previa is probably a causative factor in malformations, the exceedingly low incidence in this series of malformations in the group of mothers with placenta previa (2.0%), and the low incidence of placenta previa among the infants with malformations (1.0%) is most interesting. At the Chicago Lying-in Hospital among 48 deaths associated with placenta previa only one malformation was found, an incidence of 2.0 per cent. Malformations were found in 18.0 per cent of 526 autopsies performed on infants and fetuses delivered in the same institution.[5]

INTERFERENCE WITH CIRCULATION THROUGH THE UMBILICAL CORD

Some form of obstruction to circulation through the cord was stated to have occurred in association with 135 deaths; 61 of these were true prolapse, 74 were diagnosed as "cord around the neck, arm etc." or other entanglements.

Prolapse of the Umbilical Cord.

Prolapse of the cord occurred in association with the birth of only 1 per cent of the previable infants and fetuses, 3.1 per cent of the premature and 4.0 per cent of those at term. It also occurred in 1.1 per cent of those who died before the onset of labor, 1.3 per cent of those who died after birth, but in a much higher percentage of those who died during labor — 7.9 per cent. The usual time of cord prolapse is during labor and if it occurs then the infant usually dies before delivery.

Method of delivery. Only 27.0 per cent of all infants with a prolapsed cord were delivered naturally with cephalic presentations, and 25 per cent with breech presentations. The incidence of natural cephalic deliveries is only one-half, while that of breech deliveries is twice the figure for the entire group. All types of forceps were proportionately somewhat more frequent (low forceps 8.3%, mid and high forceps 6.3%), while delivery by version and extraction (14.6%) was much more frequent and was exceeded only by its occurrence in placenta previa. There were no deliveries by Cesarean section in association with prolapse of the cord. Other forms of delivery, including craniotomy, Braxton-Hicks version, etc. accounted for 18.7 per cent, a figure almost six times as great as for the entire group, and higher than its association with any other condition.

Pathologic lesions in the infants. In only 22.9 per cent of the infants were pathologic lesions absent, and in almost half, 46.0 per cent, there were hemorrhages definitely characteristic of those found in association with asphyxia. In 25.0 per cent intracranial or other traumatic hemorrhage was present, an incidence twice as great as that which occurs in the absence of any form of complication, and one which is exceeded only by that group in which there was a definite statement that labor was abnormal or delivery difficult. Malformations were present in only 2.1 per cent, and miscellaneous conditions in 1.4 per cent. These figures indicate that in over half of the infants death was probably due to a direct cutting off the circulation through the cord, but that in an additional one-fourth operative procedures which resulted in fatal injury were undertaken to expedite delivery of the infant.

The incidence of prolapsed cord was only 5.7 per cent among the infants and fetuses showing evidence of asphyxia at autopsy, 4.4 per cent in those with traumatic hemorrhage, 1.3 per cent in those showing no abnormalities and only 0.5 per cent in infants exhibiting malformations.

HEMORRHAGE UNDIAGNOSED AS TO CAUSE; CORD ENTANGLEMENTS

These two conditions have been combined for study because of the possibility that each may lead to interference with fetal circulation, and because of the impossibility of definitely estimating their significance in relation to the fatal outcome.

Hemorrhage of Unknown Origin.

Hemorrhage of unknown origin occurred in 59 women, almost half (25) associated with delivery during the previable period, 21 during the premature period and only 13 at term. In over half (32) death did not occur until after delivery and the majority of these deaths were due to immaturity; only 6 infants were at term. Thirteen died in the intrapartum and 14 in the antepartum period.

Cord Entanglements.

Cord entanglements occurred in 74 instances. Two-thirds (51) of the infants were at term and in the other third 19 were premature, 4 were previable. Slightly less than half (35) of the deaths occurred before the onset of labor, almost as many (32) during labor and only 7 after birth. All of those in whom death occurred after birth were at term.

In the combined groups of non-specific hemorrhages and cord entanglements 54.8 per cent of the infants and fetuses failed to show abnormalities at autopsy, but only 10 of the total 132 were neonatal deaths in term infants. One-fourth (20.5%) exhibited evidence of asphyxia, 8.5 per cent traumatic hemorrhage, 7.7 malformations and 8.5 per cent miscellaneous conditions.

The incidence of non-specific hemorrhage or cord entanglements was somewhat lower in those infants with traumatic hemorrhage (3.6%) and higher (7.3%) in those showing no abnormalities than in those with evidence of asphyxia (6.3%) and malformations (4.3%).

MEDICAL CONDITIONS UNASSOCIATED WITH PREGNANCY

This diagnosis was made 163 times and includes 72 cases of syphilis.

Syphilis.

A diagnosis of syphilis had been made before or during pregnancy in 72 or 3.6 per cent of all mothers in the series. This was based on a history of infection, of treatments, or on a positive Wassermann reaction. Practically all patients had had treatment and in some it had extended over a period of several years. In only 25 infants or fetuses was evidence of syphilis demonstrable. Seventeen of these died before the onset of labor, 3 during labor and 5 after birth. Two were previable, 16 premature and 7 were at term. All deliveries were non-instrumental, 20 being cephalic, 5 breech.

It is interesting to note that of the 479 macerated babies which were included in this series only 17 or 3.5 per cent showed evidence of syphilis in spite of the fact that all macerated fetuses were carefully examined for evidence of this condition, and Levaditi stains for spirochetes were performed on the liver and adrenals of each fetus. The impression is still prevalent that maceration is usually indicative of syphilis. In our experience maceration is very infrequently due to syphilis.

Medical Conditions Exclusive of Syphilis.

Medical conditions exclusive of syphilis were present in 91 women and in an additional 3 non-gynecologic operations were performed. Cardiac disease, the condition most commonly encountered, was present in 23 or 1.5 per cent of the entire series. The other conditions diagnosed were diabetes 14, chronic glomerulonephritis 5, tuberculosis 4, acute respiratory infections 15, pyelitis 14, and other diseases 14.

Method of delivery. The number of deliveries accomplished by each method in mothers with medical complications follows very closely the proportionate number of each in the entire series. Although the total number in which forceps were applied is almost equal in both groups there are proportionately more mid forceps and fewer low forceps among the mothers with medical complications. In view of the small number of cases, however, this may be a coincidence.

Pathologic lesions in the infants. Half (49.4%) showed no abnormalities at autopsy, 17.2 per cent traumatic hemorrhage, 11.5 per cent evidence of asphyxia, and 8.2 per cent malformations. When all the infants in the series are grouped according to lesions present at autopsy, the incidence of medical complications in each group is much the same.

ABNORMAL LABOR AND DIFFICULT DELIVERY

A statement that labor was abnormal as a result of uterine inertia or abnormalities of the soft tissues was found in 26 instances, as a result of a contracted pelvis in 23, and that difficulty was encountered in effecting delivery in 44 instances. It did not occur in the previable period and only about one-fifth of the number were in the premature period. The incidence among all premature infants was 2.2 per cent, among infants at term 9.0 per cent. It was found in association with 10.3 per cent of the deaths during delivery, and 4.5 per cent of those in the neonatal period.

Method of delivery. In 23.0 per cent delivery was non-instrumental, 16.4 per cent being cephalic and 6.6 per cent breech. Difficulty was encountered in delivering the shoulders in the majority of these cephalic presentations. In 6.6 per cent forceps were applied to the aftercoming head; in 37.2 per cent forceps were applied to the forecoming head, 14.2 per cent being applied at the outlet, 23.0 per cent at the mid plane or higher. Version and extraction was performed in 6.6 per cent and Cesarean section in 13.1 per cent. In 13.1 per cent some type of destructive operation was done.

Pathologic lesions in the infants. Only 20 per cent failed to show definite pathologic lesions at autopsy, and this is the lowest incidence found in any group in the series. Intracranial or other traumatic hemorrhage was found in 41.2 per cent, a figure much higher than in any other group. Nineteen per cent showed evidence of asphyxia, 6.6 per cent were malformed, 13.3 per

cent had miscellaneous conditions, the majority being intrauterine pneumonia.

Difficult delivery or an abnormal labor was found in 13.5 per cent of the infants showing intracranial hemorrhage, 4.4 per cent of those showing evidence of asphyxia, 2.9 per cent of those with malformations and only 2.1 per cent of those showing no abnormalities.

OTHER COMPLICATIONS

Unattended Delivery.

Delivery was unattended by doctor or midwife in 33 instances. In 7 the fetus was previable, in 13 premature, and in 13 it was at term. Maceration was present in 4, death appeared to have occurred within a short time of delivery in 13, and 16 were alive at the time of birth.

A Fall or Other Form of Injury.

A fall or other form of injury was stated to have occurred within a short time before the onset of labor in 28 women. In 13 the fetus was previable, in 8 premature and in 7 it was at term. Thirteen deaths occurred before the onset of labor, 8 during labor, and 7 after birth. In none of these was there a premature detachment of the placenta or demonstrable evidence of injury to the fetus, so that the actual role of maternal injury as a cause of or contributing factor in these deaths is extremely difficult to evaluate.

Hydramnios.

Hydramnios was diagnosed 56 times and in the majority of instances was associated with fetal malformations. In 15 cases the fetus was previable, in 26 premature and in 15 it was at term. In 12 death took place before the onset of labor, in 14 during labor and in 30 after birth. Most of the infants who died after birth succumbed from major malformations.

Premature Rupture of Membranes.

Premature rupture of membranes was recorded in only 50 cases or 2.5 per cent of the entire series. This figure is probably much lower than the true incidence for in many cases accurate information on the time of rupture is lacking. Death occurred in the antepartum period in 13, during labor in 19, and after delivery in 18. Twelve were previable, 16 premature and 22 at term. Eight of the infants had pneumonia at the time of birth, four having died during delivery and four within a short time after delivery. This is a surprisingly low incidence of pneumonia in view of the fact that early rupture of membranes predisposes to infection of the amniotic fluid. In 9 there was evidence of birth trauma, in 7 evidence of asphyxia and a malformation in only one.

Shock and Vascular Collapse.

Shock and vascular collapse without hemorrhage and with subsequent recovery was present during the delivery of two term infants one of whom died during delivery and one soon after delivery. Both deaths were apparently due to anoxemia.

Rupture of the Uterus.

Rupture of the uterus was found in association with the deaths of 2 premature and 6 mature fetuses. All deaths occurred during labor except for one premature and one term infant who died after delivery.

Maternal Deaths.

Maternal death occurred 11 times. Two women died undelivered, one from hemorrhage and infection resulting from an undiagnosed rupture of the uterus, the other as a result of an acute fulminating toxemia with convulsions. Among the nine postpartum deaths there were four due to hemorrhage, 2 to eclampsia, and 2 to acute cardiac failure. One patient with an abruptio placentae died of shock immediately following a Porro Cesarean section, one delivered naturally but was subjected to a hysterectomy soon after delivery because of uncontrollable hemorrhage and died one and one-half hours afterward. One patient with placenta previa was subjected to manual dilatation and version and extraction because of failing fetal heart tones and death occurred within a few hours after delivery; the other patient with placenta previa had a twin pregnancy, the placenta of the first twin being over the internal os. Kielland forceps were applied to the head of the first twin in the midplane of the pelvis and a depressed skull fracture leading to fetal death from intracranial hemorrhage was produced. Maternal death occurred soon after delivery of the second twin, the cause presumably being hemorrhage from uterine atony. In both cardiac patients congestive heart failure developed during labor and

Table VII

Length of Labor in Relation to Anatomic Lesions of Infants Dying during Labor or after Birth

Length of Labor	No Abnormalities		Traumatic Hemorrhage		Asphyxial Hemorrhage		Malformations		Other Lesions		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 2 hours	47	50.6	8	8.6	11	10.2	13	13.9	14	15.1	93	100
2.1 to 6 hours	125	44.1	31	10.9	50	17.4	40	14.0	38	13.4	285	100
6.1 to 24 hours	210	37.8	106	19.1	91	16.4	84	15.1	65	11.6	556	100
24.1 to 48 hours	39	28.5	51	37.2	17	12.4	13	9.5	17	12.4	137	100
Over 48 hours	15	27.3	22	40.0	9	16.4	13	5.5	—	—	65	100
Stated as prolonged only	6	40.0	5	33.3	2	13.3	0	0	—	—	15	100
Total	443	38.5	223	19.4	180	15.6	163	14.2	142	12.3	1151	100

death occurred soon after delivery; one was at term and was delivered with mid forceps, the other was at 26 weeks gestation and delivered spontaneously. Of the four toxemic patients, one previously mentioned died undelivered, one died almost immediately after delivery by craniotomy, one died the day following delivery by Cesarean section, and one whose infant showed evidence of erythroblastosis died within a few hours after a natural cephalic delivery.

LENGTH OF LABOR IN THE ENTIRE GROUP

The length of labor was given in the histories of 1151 infants who died during labor or after delivery and who were not delivered by Cesarean section. Labor was less than 2 hours in 8.2 per cent (93), 2 to 6 hours in 25.0 per cent (285), 6 to 24 hours in 48.7 per cent (556), 24 to 48 hours in 12.0 per cent (137) and more than 48 hours or stated as prolonged in 6.1 per cent (80).

The relationship of the length of labor to cause of fetal or infant death is shown in Table VII. The only causes of death which show any remarkable variation in relation to duration of labor are birth trauma and prematurity. The incidence of injury sustained during birth becomes progressively greater as the length of labor increases. It accounts for only 8.6 per cent of the deaths in which labor is less than 2 hours, but for 40.0 per cent of those in which it is over 48 hours. The incidence of prematurity in relation to the length of labor is in inverse order. Almost half (45.2 per cent) of the infants who died during or following a labor of less than 2 hours were premature and showed no pathologic lesions at autopsy while only 9.1 per cent died of prematurity alone when labor exceeded 48 hours. Labor in general is somewhat shorter when the infant is premature and dies without demonstrable pathologic lesions than it is in the entire group (42.6% of deaths from prematurity and 33.2% of the entire group had labors less than 6 hours) but is definitely shorter than among those infants showing evidence of birth trauma (17.5% had labors less than 6 hours). Thirty-two per cent of the infants with birth trauma were born after a labor of more than 24 hours, while there were 16.8 per cent in the entire group and only 8.2 per cent in the infants dying of prematurity.

CONCLUSIONS

It is evident from such a study that information concerning the environment of the fetus and infant from the time of conception until death and the knowledge which can be obtained by thorough postmortem examination of the effect of these environmental states are both essential for an evaluation of the causative factors associated with fetal and neonatal deaths. Even with complete histories and autopsies there still remain some deaths for which no explanation can be offered. In this series of 2000 cases, there were 433 (21.6%) in which no environmental abnormalities were noted and in which autopsy failed to disclose pathologic lesions. The majority of these deaths occurred before the onset of labor although many did not take place until after delivery; in the latter group most of the infants succumbed because of immaturity. Only 43 (2.1%) were infants at term who died during labor or after birth. As has been stated on previous occasions the two fields in which our

knowledge of how to further decrease the mortality is completely lacking, are in fetal deaths occurring before the onset of labor and in the premature onset of labor in the absence of discernable maternal abnormalities. The conditions of which we are cognizant that are most condusive to fetal and neonatal mortality are interference with fetal circulation before or during delivery, trauma sustained during delivery, and malformations. Improvement in obstetrical judgment and technical skill are the principal ways in which lowered mortality rates will be achieved.

SUMMARY

Some type of recognized disturbance in the environment of the fetus before birth was present in association with 51.6 per cent of 2000 deaths occurring prior to or during delivery or in the neonatal period. Maternal toxemia and states leading to interference with circulation through the umbilical cord or placenta comprised the majority of the complications. Less frequently encountered were syphilis and other diseases unassociated with pregnancy, maternal injuries, abnormal or prolonged labor or delivery and other miscellaneous conditions. Neither abnormalities of the environment nor pathologic states in the body of the fetus or infant could be found in 21.6 per cent of the total cases. Only 1.0 per cent of those failing to show pathologic changes were infants born alive at term.

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A low standard of living is responsible for most of the tuberculosis among wage earners, rather than specific environmental factors. The influence of nutrition, fatigue, extremes of temperature and humidity and specific intoxications such as lead were studied and it was agreed that only nutrition had an appreciable effect upon tuberculosis incidences among workers. Of the respiratory irritants, including fumes and gases, as well as dusts, only free silica has a specific influence upon the disease. Leroy U. Gardner, M.D., Rep. Sixth Ann'l Meeting of Industr. Hygiene Foundation.

MANAGEMENT OF CHRONIC ARTHRITIS

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The so-called specific arthritides are the best understood group of chronic arthritis. They are due to generally accepted causes such as injury, gout and the definite infections: tuberculosis, gonorrhea and undulant fever.

Although the causes are well recognized, effective, particularized therapy exists only for gonorrhea and, to a less degree, for gout. Sulfonamide preparations and fever cure most cases of gonorrheal rheumatism. Suitable diet and hygiene can in large measure prevent exacerbations of gout. Colchicum and the dangerous cinchophen are almost specific in relieving the acute manifestations of gout.

The great group of nonspecific arthritides are helpfully classified by the American Rheumatism Association according to the constitution of the patients, the changes in the joints and the clinical propensities of the joint disease into atrophic and hypertrophic types.

Atrophic arthritis predominately afflicts youth and young adults of the asthentic, Stiller or ptotic constitution. The predisposed type of individual tends to be tall, thin, narrow faced, long-necked, low in energy. His extremities are long and the musculature is sparse. The blood pressure is usually low. Such patients are chronically fatigued. They are prone to upper respiratory infections. They were formerly classed as "phthisical" because of their long, narrow chests.

Chronic arthritis peculiar to this asthenic type of person tends to anchylose in grotesque positions leading to the synonym of arthritis deformans. It is commonest in women. The small joints are predisposed. It often starts in the fingers progressively implicating the wrists, ankles, feet and elbows. Feeding is often difficult due to anchylosis of the jaw joint. The symmetry of its progress is striking. The soft tissues attached to the skeleton participate in the deforming process. The muscles atrophy. Contractures appear. The periarticular tendons and

Given at the 2nd District Post Graduate Conference, LaSalle, 1940.

ligaments and joint capsules thicken. Even in a bed-fast victim x-ray may show no intra-articular pathology. The cartilaginous surfaces may be quite smooth. Excess of synovial fluid leads to swelling of the joint, often fusiform. This may fluctuate. Then the x-ray shows an increase of joint space. Later destruction of cartilage and of the specific serous secreting membrane, the synovium, causes the joint space to appear narrow. The destruction of cartilage may be circumscribed leading to a punched-out appearance of the joint surface. Coincidentally the bones lose calcium becoming increasing transparent. This type of arthritis may selectively attack the spine producing the poker back or Struempell-Marie deformity. An additional, painful complication of the spinal type is the radiculitis expressing itself as sciatic, intercostal or brachial neuralgia.

The patient with atrophic arthritis wastes, looks and feels sick. Anemia of the secondary, small-celled type develops. Appetite fails. A low-grade, septic fever is often present. The sedimentation time becomes rapid. We have found streptococci in the blood of many of such patients. This clinical picture has led to the name of chronic infectious arthritis. In children it is called Still's disease.

Treatment of these victims is analogous to that of another chronic infection, tuberculosis. To secure the best cooperation and prevent the migration of patients from doctor to doctor the patient with chronic, progressive, anchylosing, deforming arthritis must be given the proper perspective. He must be told that he will be sick for months, that recurrences and set-backs are part of the usual clinical course, that he should not expect too much from any one therapeutic procedure be it surgical as extraction of pulpless teeth; medical as the use of any new drug or type of injection; or physiotherapeutic as fever, massage or a light. He must be assured that he has a good chance to get well. With very few exceptions these patients can be truthfully promised marked benefit from meticulous care carried out for months. Those with rheumatoid characteristics preponderating (less tendency to anchylosis) are as likely to be cured or freed of symptoms as patients with peptic ulcer or such infections as tuberculosis or chronic gonorrhea.

The management involves foremost such hygienic measures as rest, definitely prescribed and sufficiently prolonged. In many instances complete temporary invalidism will have to be accepted as the shorter and ultimately cheapest road to recovery. Partial casts or splints may be needed to maintain rest of involved parts. Salicylates remain the most commonly used drugs for joint pains. Salicylates given as acetylsalicylic acid with calcium salts are demonstrably superior. For two years I have used a mixture of acetylsalicylic acid and calcium glutamate. In the stomach[1] this mixture forms the very soluble, active calcium acetylsalicylate. As contrasted with aspirin this does not irritate the gastrointestinal tract and gives prompter effect. It is usually well tolerated by patients intolerant to aspirin.

Dietary adjuncts as vitamins and calcium and phosphorus are important. The best diet seems to be one carrying an abundance of minerals, vitamins B, C and D and enough roughage to secure good bowel activity. Calories are sought in the fats rather than in carbohydrates. A high intake of meat and eggs is necessary to combat anemia and compensate for the rapid protein break-down. It is generally recognized that a generous protein intake increases resistance to any infection.

Physical therapy, supervised by a physician, is indispensable. Heat can be best applied locally with heat lamps or bakers. Hot compresses are especially valuable in the exacerbations. Contrast baths lend themselves to treatment of subacute or chronic arthritis of the extremities. Wax baths can be best utilized in treating the hands or feet. Fever therapy has proved of temporary benefit in a few stubborn cases.

Patients with atrophic arthritis tend to assume the posture of fatigue: kyphotic upper spine with winged scapulae, lordotic lower spine with protuberant abdomen, flat feet. They are coached in the postural exercises of Goldthwaite and Osgood and corrective foot exercises are stressed. Proper shoes are definitely prescribed and are adjusted to the patient's needs by soft felt padding.

1. Furnished by courtesy of Lakeside Laboratories, Milwaukee, Wis.

Diathermy is the most convenient and effective means of heating deep tissues. Short wave high frequency has practically replaced conventional diathermy. In my practice it is applied by means of the induction field utilizing a cable electrode.

Floundering in skepticism of procedures long regarded as helpful in some patients with arthritis but not curative in all, trying in vain to reduce treatment of disease to a physiological experiment, some writers discredit the most helpful doctrine ever advanced in the treatment of chronic arthritis, the theory of focal infection. While infected tissues have undoubtedly been removed without obtaining hoped-for improvement, Billings' and Rosenow's teachings have done more to reverse the progressive invalidism of chronic arthritis than any other suggestion thus far advanced. In spite of a tendency to belittle focal infections, removal of pulpless teeth in adults or tonsillectomy in more youthful patients results in recovery or improvement too frequently to be called coincidental. Perhaps the best evidence for the causal connection of infected foci has been the exacerbation or intensification of symptoms ensuing after inopportune surgical disturbance of suspected foci. To avoid this I permit tonsillectomy, tooth extraction, or prostatic massage only after the patient's general health has improved or joint manifestations have subsided.

Rejecting infection as one of the causes of chronic arthritis has led to abandoning vaccines in its treatment. I regard streptococcus vaccines properly made and intelligently used as an important aid in the recovery of that class of patients presenting findings characteristic of infection. Vaccines also may be used to prevent the exacerbations occurring after removal of infectious foci. Vaccine is injected subcutaneously in subreaction doses. I have found vaccine superior to other forms of foreign protein therapy.

I have never seen any improvement from sulphur or iodides. Change of climate has in my experience never resulted in any more benefit than would be expected from removing the patient from his responsibilities.

Gold therapy is undergoing a revival. It is my practice to reserve it for patients with an arthritis, predominantly atrophic, not responding to other measures. Its dangers are universally recognized. I have yet to see a patient respond favorably to gold injections, regardless of preparation used, after failing to benefit from the more commonly used, safer methods. It has seemed to me that the patients most improved by gold have been those with some evidence of liver damage resulting from the medication.

Careful x-ray treatment often relieves the symptoms of Marie-Struempell's disease, poker back or atrophic arthritis of the spine.

The patient with hypertrophic arthritis is usually past middle life. His constitution tends to be sthenic, robust. He boasts of never having been ill. He has often led a vigorous life. He tends to be overweight. His face is round, his complexion plethoric. His neck is thick and short. His chest is deep and round. His blood pressure is often elevated. Such patients have good appetites. They are commonly constipated.

Trauma plays an important role in the location of the joints involved by hypertrophic arthritis. Typists and pianists develop arthritic finger joints. Miners have arthritis of the spine. The obese patient has arthritis of the knees and lumbar spine. The Charcot joints of tabes are currently regarded as hypertrophic arthritis due to trauma.

In hypertrophic arthritis the arthropathy has a predilection for the large joints, often on one side. In the small joints hypertrophic arthritis is represented classically by Heberden's nodes in the terminal joints of women at the time of the climacteric.

The x-ray shows spurs and frequently narrowing of the joint space due to erosion of the cartilaginous plates.

Although the shafts of the patients' senile bones are often thin and brittle from osteoporosis the trabeculae about the joints are extra heavy. The cartilage is progressively eroded until finally the eburnated bone ends are approximated.

Bony overgrowth and muscular spasm due to pain may limit the motion of the osteoarthritic joints but true anchylosis, as seen in the atrophic type, never develops. Osteophytic growth and changes in alignment may result in very marked deformity. In this country arthritis deformans is atrophic arthritis. In England arthritis deformans is taken to mean hypertrophic or osteoarthritis. Because of the age of the patients, their well-nourished state, their plethora and

high blood pressure such patients have incorrectly been said to have gout. This incorrect diagnosis has erroneously raised the incidence of gout.

Joints afflicated with hypertrophic arthritis have to be protected against trauma. With this in mind the obese patients must reduce weight. Many of them are women in the menopause leading to the designation menopausal arthritis. These women irrespective of their basal metabolic readings frequently improve on thyroid. Estrogenic substances have failed consistently to benefit patients with arthritis. These substances, theelin and estradiol, have very effectively removed the arthralgic complaints of the climacteric. Only second to the metabolic approach is the effectiveness of physical therapy in hypertrophic arthritis. Reassurance that invalidism with deformity is unlikely is of great help in treating this type of arthritis.

A great group of patients present features common to the hypertrophic and to that subgroup of atrophic arthritis termed infectious. This motley, unclassified group actually embraces most patients with chronic arthritis. For sake of a better term their arthritis is said to be mixed although either the atrophic or hypertrophic characteristics predominate, marking the trend of the arthropathy. This mixed group requires a careful appraisal of the possibilities of the therapy used in the two great groups. Such patients have a better outlook for recovery than patients with classical atrophic or hypertrophic joint changes.

Fibrositis, a form of soft tissue rheumatism, involves most frequently the capsules of joints and the periarticular ligaments, bursas, tendons and fascia. It is a common complication of arthritis and like hypertrophic arthritis, affects especially overweight individuals past middle age. Lumbago is its commonest expression. Excluding arthritis, most pain about the neck and shoulder is due to fibrositis. Patients with arthritis frequently have the tender nodules of fibrositis about the sacroiliac joints. Fibrositis responds well to heat and massage. Recently we have used acetylcholine (Mecholyl) with the galvanic current in fibrositic patients with brilliant results.

The patient with chronic arthritis is statistically justified in maintaining a hopeful attitude regarding recovery or at least in expecting marked benefit by the use of known, accepted methods of treatment. Probably in arthritis more than in any other disease more effort has been made to remove empiricism from treatment. But, as in other diseases, treatment has preceded a wholly satisfactory explanation of its mode of action.

THE INJECTION TREATMENT OF HEMORRHOIDS*

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The injection treatment of hemorrhoids although limited in its field of usefulness is recognized as an adequate means of therapy in selected cases. Most of the contrary opinions are based on adverse results which sometimes occur, such as recurrence, sloughing, abscess and fistulae. These have been eliminated to a great extent by perfection of technic, but the greatest factor in obtaining satisfactory results is the proper and discriminating selection of cases. The great misfortune is that those not properly schooled in the anatomy of the anorectum and qualified in the technic are prone to inject hemorrhoids indiscriminately. Failure and complications follow incorrect diagnosis, non-observance of the contraindications and faulty technic. Strict adherence to every detail and utmost care must be exercised if one is to avoid disaster. According to Martin, approximately 50 percent of all the cases of internal hemorrhoids are suitable for injection treatment, but it is advisable that the patient understand definitely the merits and limitations of this form of therapy.

Hemorrhoids of the internal variety when small or of moderate size, and uncomplicated are suitable for the injection treatment. This form of treatment is contra-indicated in all external

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hemorrhoids, including skin tags; in the presence of marked fibrosis of the internal hemorrhoids; in complicated cases where inflammation and prolapse are marked, or in those which are thrombotic, strangulated or ulcerated; in the presence of associated pathology or a markedly contracted sphincter muscle.



Figure 1. Proctoscopic view of internal hemorrhoid. The needle has been inserted in the submucosa.

The purpose of the injection treatment is to shrink the pile mass by obliterating the varicosities with fibrous tissue through the deposition of some sclerosing solution into the submucosa immediately overlying the hemorrhoidal veins.

The selection of a sclerosing fluid is important in the injection of internal hemorrhoids. Quinine and urea hydrochloride, 5 percent aqueous solution, and 5 percent phenol are standards which may be used with satisfaction. Sodium morrhuate, 5 percent in benzyl alcohol, may be injected if the patient has an idiosyncrasy to quinine, or during pregnancy when quinine would be contra-indicated. A comparative three year study of the effect of solutions of phenol and those of quinine and urea hydrochloride discloses that the results were more satisfactory with the latter, for which reason we employ it routinely.

The armanentarium necessary for this treatment is a suitable anoscope, syringe, and needle, sclerosing solution, and good light. We use routinely the anoscope designed by C. F. Martin and find it excellent for this purpose. Any type of syringe may be employed for this injection treatment provided it meets the necessary requirements and can be conveniently handled by the operator. Either a tuberculin or the ordinary Luer syringe is suitable for this purpose, especially since standard needles can be attached. A 24 or 25 gauge needle of medium bevel is preferable. In all cases good illumination is essential whether it be direct or indirect.

Technic. No preliminary preparation of the patient is necessary. With the patient in the left lateral position, the upper cheek of the buttocks is held by the patient or an assistant and the well lubricated gloved finger inserted into the anus. A few circular movements with the finger before the speculum is introduced, tends not only to moisten thoroughly the anal canal and partially relax the sphincter, but to assist in gaining the confidence of the patient. The speculum is smeared with a water-soluble lubricant and gently inserted in a rotary manner. Ordinarily this is accomplished more readily if the patient will strain or bear down. After the hemorrhoidal tissue is exposed, carefully inspected and the most prominent pile selected for the injection, the surface is wiped clean with a dry cotton applicator and painted with gentian violet 1 percent solution. The needle is inserted into the upper portion of the pile mass for a distance of approximately $\frac{1}{8}$ to $\frac{1}{4}$ inch. It is important to introduce the tip of the needle into the submucosa and not into the vein. The plunger is slowly pressed until 8 to 12 minims of the quinine and urea hydrochloride solution are injected or until slight ballooning takes place. The surface should appear blanched or ischemic. When a sufficient quantity of the solution has been injected, the speculum and needle are withdrawn simultaneously. It is unwise to re-insert the instrument once it has been withdrawn.

There should be no pain at the time of, or following the injection, although a sensation of fullness occurs infrequently. The most common cause of pain is making the injection too close to the anorectal line; so that, should any discomfort take place during the insertion of the needle it should be immediately withdrawn and re-inserted at a higher level. By rotating the speculum, with the tip of the instrument well above this line of junction, the injection can be

made painlessly. A burning discomfort ofttimes occurs following the injection of too large an amount of the solution.

It is of the utmost importance that the hemorrhoids be treated at regular intervals and not in a haphazard fashion; ordinarily all cases are injected twice weekly without interruption. The morning during the course of the treatment. A daily evacuation is essential during the course of treatment but drastic purgatives are to be avoided. The regular diet is permitted.

The advantage of this form of treatment is the fact that no pain, either during or following the injection accompanies this procedure, if

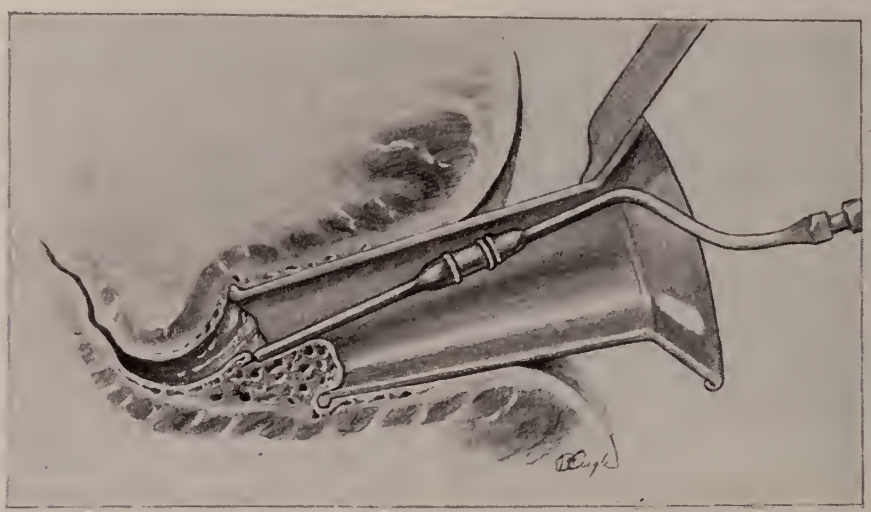


Figure 2. Sagittal view showing needle in the upper portion of the hemorrhoid, preparatory to injection of the sclerosing solution.

number of injections required is determined by the number of hemorrhoids present and their response to treatment. It is customary to inject one hemorrhoid at each visit. When they are of small size, however, we do not hesitate to make additional injections, especially if the patient resides at a distance, making frequent visits inconvenient. As an average it may be said that each hemorrhoid requires from two to four injections, so that a total of six to sixteen constitutes a course. Usually at this time the hemorrhoidal masses will have disappeared. Accurate record must be kept as to the site of the injection as well as the amount of solution administered and the date of each injection.

No specific treatment is required following the injection, although the patient is advised to avoid severe physical strain on the day the treatment is administered. Liquid petrolatum, ½ to 1 ounce by mouth is prescribed night and

properly performed. The method requires no anesthetic and is more economical for the patient. It is an ambulant procedure and therefore does not necessitate hospitalization. This therapy can be employed without risk and can be utilized in pregnancy, diabetis and old age, as well as in cardiac, renal and pulmonary diseases.

The disadvantages of the treatment is the frequency of recurrence in from two to five years.

Complications are comparatively rare in the hands of experienced operators, who carefully select their cases for treatment. In some instances a feeling of syncope may occur during or immediately after the injection, but such quickly subsides. At times a sensation of heat or slight fullness exists for a few minutes, but rarely does it continue for more than half an hour. Should pain or discomfort occur, the application of compresses wrung out in hot water, or a sitz bath 110° F. are very helpful.

In a small proportion of cases idiosyncrasy to quinine will be noted. This condition may be recognized by the appearance of generalized erythema, uticaria, impairment of vision, pallor, vertigo, deafness or blindness. In such cases, phenol or sodium morrhuate should be substituted in the future.

Marked bleeding never occurs unless sloughing takes place. In part, this may be avoided by withdrawing the speculum at the same time as the needle. This relieves the tension placed upon the pile mass by the tip of the anoscope and permits the rectal walls to collapse, which serves to exert slight pressure and thereby prevents bleeding. Sloughing is due to the use of too strong a solution or an excessive amount of solution, or to making the injection too close to the anorectal line. Sloughing may be treated by the instillation of warm olive oil or dichloramine-T. In some cases bleeding is not infrequent and pressure with a plug of vaseline gauze, or even ligating, may be necessary.

This form of therapy, when instituted by those properly schooled in the anatomy of the anorectal region and in the technic of administering the injection gives excellent and gratifying results. The importance of the proper selection of cases and sclerosing solution used must not be minimized. When the patient has a clear understanding of its value and limitations as a treatment and not a cure, the injection treatment of internal hemorrhoids becomes one of the most valuable assets in the armamentarium of a proctologist.

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Let us make every American strong, stronger than ever before, sturdier in body, steadier in nerves, surer in living. This is our job, not all of it, but a vital part. Harriet Elliott, Nat'l Defense Adv. Commission.

The boy who wears a clean shirt but has a dirty neck is in the position of hospitals which deny admission to known cases of tuberculosis. Hospitals which admit known cases of tuberculosis or realize that tuberculosis may be present and unrecognized, are being modern, logical and wise. They may then segregate the known cases and protect their personnel. They will be alert to case finding among the new admissions. W. H. Oatway, Jr., M.D., Hospitals, August, 1941.

THE TUBERCULIN TEST

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Tuberculin is a product of the tubercle bacillus, which when introduced into the skin of an individual who has had an experience with the tubercle bacillus, calls forth a delayed or bacterial type of reaction of the host. This is in contrast to the immediate or non-bacterial type of protein hypersensitivity. Numerous methods of preparing and administering tuberculin have been described, but only those which have proven to be most efficacious and practical will be the subject of this discussion.

Source of Tuberculin

a. Old Tuberculin (O.T.) Tubercle bacilli (human or bovine or both) are grown on a fluid media (peptone-glycerine broth) for from 6 to 8 weeks. These cultures are then concentrated on a steam bath to 1/10th of their original volume (the bacilli may or may not be filtered off before the boiling). The final filtrate, a dark brown, clear fluid, is the so-called concentrated old tuberculin (O.T.).

b. Purified Protein Derivative (P.P.D.). The method of preparation and concentration is similar to that above (the bacilli are grown on a synthetic media which eliminates the protein of the broth). Further concentration and purification is effected by subjecting the concentrated filtrate to ultrafiltration and precipitation of the protein by trichloracetic acid to remove the carbohydrate.

Methods of Administration

a. Intracutaneous (Mantoux). Old tuberculin or P.P.D. may be used, the desired amount of tuberculin being contained in 0.1 ml. of diluent. A special beveled shoulder needle, of 26 gauge and 3/16th inch cannula, plus a 1 cc. tuberculin syringe, is recommended. The injection must be made in the superficial layers of the skin and when properly executed leaves a 1 cm. in diameter bleb. The writer has ob-

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Presented before the Section on Public Health and Hygiene, 101st Annual Meeting Illinois State Medical Society, Chicago, May 20, 1941.

tained good blebs as follows: The barrel of the syringe is grasped with the thumb and index finger so that the head of the plunger rests in the palm of the hand. The syringe and needle are held tangentially to the inner aspect of the alcohol cleansed forearm. Because of the beveled shoulder of the needle, the point of the latter will touch the skin. By a gentle, forward, rocking, side to side motion, the point is engaged in the superficial layers of the skin until a little beyond the orifice is buried. Pressure is now gently exerted by the palm of the hand, obviating a change of position. Readings are taken 40 to 48 hours after the injection.

b. Percutaneous (Patch test — Vollmer). The patch consists of filter paper, impregnated with concentrated old tuberculin (two papers) and a broth control (one paper) held in place by adhesive tape. The interscapular region is ideally suited for this test, although the inner aspect of the forearm or the anterior chest wall may be used. When hair is present, shaving is necessary. The site is defatted with acetone or ether, and allowed to dry. The tape is then applied (removing the crenoline) and well massaged for at least 10 strokes. The palm of the hand is held against the tape for a few seconds to warm the adhesive. The tape should be removed in 48 hours and readings taken at 96 hours.

Reading of Reactions

a. Intradermal. An area of induration at least 10 mm. in one diameter (8 mm. for infants under 3 months) constitutes a positive reaction. Redness alone is considered negative. When the degree of induration is slight, stroking the site gently with the small finger and comparing with the opposite, non-injected forearm is often helpful. There have been many methods advocated for determining the size of the reaction, but the simplest and most practical is to measure the smallest and largest diameter of induration. The degree of reaction is arbitrary, beginning from one plus (+) when the induration is just perceptible to four plus when necrosis accompanies the lesion. Redness may also be measured and the intensity recorded (+ to ++++), but this is not important. At times, a halo of redness will surround the central site of induration (a reflex nervous phenomenon similar to that seen in histamine wheals). This zone should not be included in the measurement of the size of induration.

b. Percutaneous. The reaction is considered positive when several discrete to innumerable coalesced papulo-vesicles on the tuberculin site and none in the control area are found. Because the reaction at times extends beyond the site of tuberculin, the lesion is measured in two diameters. Whether there are few, many or innumerable papulo-vesicles is also recorded. It has been found in the main that severity of reaction of the patch test corresponds to that of the Mantoux. Some skins are sensitive to the adhesive tape, and papules may form but the site of the impregnated papers usually remains free. Occasionally papules are noted as a result of the control broth; such lesions are usually few in number, differ in character, and disappear by 96 hours.

When numerous papulo-vesicles are noted after 48 hours, the reaction may be considered positive provided the control area is free of lesions. A few vesicles at 48 hours have been noted to disappear after 2 days.

Dilution of Tuberculin to be Used

This depends upon the age of the individual, his environment (social and tuberculous) and clinical symptoms. Old tuberculin and purified protein derivative will be considered together, the equivalents being:

1st strength P.P.D. (.00002 mg.)=0=1:25,000 (.004 mg.) to 1:50,000 (.002 mg.) O.T.

2nd strength P.P.D. (.005 mg.) =0= 1:100 (1 mg.) to 1:200 (0.5 mg.) O.T.

a. Age. In routine private practice, with no known history of tuberculous exposure, the equivalent of 1 mg. O.T. (1:100 O.T. or 2nd strength P.P.D.) can be safely employed in children up to five years. From 5 years to 18 years, .02 mg. O.T. (1:5,000 O.T. or 2nd strength P.P.D. diluted 50 times), and from 18 years on, .004 mg. O.T. (1:25,000 or 2nd strength P.P.D.) are recommended as the first test dose. If the first test is negative, it should be repeated in 48 hours on the opposite arm, using 1 mg. O.T. or 2nd strength P.P.D. By following this procedure, second testings will be minimized and the number of severe reactions reduced.

b. Environment. For children living in crowded districts, especially in large cities, 1 mg. O.T. as the first test dose can be employed only up to 2 years of age with safety; otherwise, the same procedure as above should be followed to avoid severe reactions. This factor was clearly demonstrated by Tice in a tuberculosis survey of Chicago school children. With a history of exposure to tuberculosis, or for those whose profession places them in close contact with the tubercle bacillus (internes, nurses, doctors, orderlies, technicians and bacteriologists), the first test dose should be with .002 mg. O.T. (2nd strength P.P.D.) followed, if negative, by .02 mg. O.T. and finally 1 mg. O.T. or equivalent.

c. Clinical Symptoms. Suggestive of Tuberculosis. In all ages the first test dose should be .001 mg. O.T. (1:100,000 O.T. or 2nd strength P.P.D. diluted 2 times). Subsequent testing should be done with .02 mg. O.T. (1:5000) and finally 1 mg. O.T. or equivalent. Up to 10 mg. O.T. can be used if clinical symptoms justify it, but a control broth injection must also be made as the percentage of false positive reactions in this dilution is high.

Simple Technique of Diluting Tuberculin

Draw up O.T. in a 1 cc. tuberculin syringe to the 0.1 ml. mark and sterile distilled water or saline to the 1 ml. mark (1:10 dilution). Mix well in the syringe and pour out in sterile test tube until 0.1 ml. remains in syringe. Dilute as above to the 1 ml. mark (1:100). In this way any desired dilution may be had in the multiple of 10. Dilutions up to 1:100, kept on ice, will be fairly potent up to 1 month. Dilutions up to 1:10,000 may be used for 1 week. All other dilutions should be made up freshly. Dilutions of the first and second strength of P.P.D. may be made in a similar manner.

Choice of Test to be Used

In children the patch test is highly recommendable as a routine screening procedure. In a study made by the writer with Dr. Neiman, in children from 3 months to 4 years of age there was 94.2 per cent agreement between the two tests (1 to .01 mg. O.T. was used). Among the positive reactors (children who were vaccinated with the Bacillus of Calmette and Guerin, BCG), the agreement was 88.8 per cent, while among the negative reactors, it was 100 per cent. There were no false positive reactions following the patch test, as compared to at least 1 mg. of O.T. In the literature, good agreement has been reported in children up to 12 years of age. After this age, there is some difference of opinion.

With individuals living in a congested cosmopolitan area, or where there is known contact with tuberculosis, or when symptoms suggest a tuberculous infection, the Mantoux test is preferable as given above. The writer has seen more or less severe reactions with extensive vesiculation in patch tested children who were experiencing their primary tuberculous infection.

If there is good reason for expecting a positive tuberculin reaction, and the patch test is negative, a repeat test is advisable, as shall be discussed below. If the reaction still remains negative, a final test with 1 mg. of O.T. intradermally is recommended.

Value of the Tuberculin Test

Generally speaking, a positive test signifies that a tuberculous lesion, progressive, stationary or regressive, exists in the body. Because of our methods of isolation of tuberculous patients, ambulatory pneumonthorax, slaughtering of tuberculous cows, pasteurization of milk, and general public health education, the primary infection occurs later in life than formerly. Thus, a positive reaction during childhood and adolescence should be carefully evaluated by clinical and X-ray studies. In adults, a positive test is less significant, but warrants at least one X-ray of the chest.

When a recently negative reactor becomes positive, this signifies a current infection. Such a condition in early childhood warrants clinical and X-ray studies over a period of several years, and a search for the source of infection. In adults, similar studies should be made at least over a period of one year.

Aside from technical errors, such as poor tuberculin or faulty technique of injection, conditions exist in which, notwithstanding the presence of a tuberculous process in the body, the skin fails to respond to tuberculin. The most frequent of these are:

1. *Preallergic stage,* considered to be 3 to 8 weeks following the presence of tubercle bacilli in the host. In BCG vaccinated animals and

humans, the writer has found this time to be as little as 5 to 7 days.

2. *Malignant forms of tuberculosis,* such as tuberculous meningitis, miliary tuberculosis, and tuberculous pneumonia.

3. *Debilitating diseases,* resulting from any disease where the tissue turgor is poor.

4. *Following certain infectious diseases,* especially measles and whooping cough.

5. *Following a healed tuberculous primary infection.* In a certain percentage of cases, known positive reactors subsequently lose their hyper-reactivity.

Anamnestic Reaction to Tuberculin

Not infrequently a negative tuberculin reaction upon immediate retesting may become positive the *first test,* using the same dose of tuberculin and a different site. This is explained on the basis of an awakening of a dormant state of reactivity to tuberculin (Novak). Thus, the writer has found both with the patch test and with 1 mg. of O.T. that by repeating this test dose, a certain number of negative reactors become positive. In suspected cases, a repetition of the concentrated test dose should be considered.

EVOLUTION OF THE DIAGNOSIS AND TREATMENT OF CARDIOVASCULAR DISEASES

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If we compare the physicians of 1942 with the physicians of fifty and a hundred years ago, we find some resemblance to an effort to compare electric lights, paved roads and the speedy automobile to tallow candles, mud roads and the faithful horse. Tallow candles maintain their position as units of light. Cement has taken the place of mud but the roads run in the same direction and to the same places. The old family doctors who learned after years of experience how to appraise the emotional flurries and storms of the neurologically unstable live again in the persons of the psychologists and psychiatrists. The old family doctor boiled urine in a teaspoon to discover the presence of albumen, added a little yeast to the specimen and set the bottle near the stove for a certain number of hours. If the cork blew out, the patient supposedly had diabetes. Now alert young women in laboratories, with chemical reagents, test tubes, microscopes and other mechanical aids, do promptly and accurately the simple tests the doctors of the past did so clumsily. The same young women make available to physicians in practice the information the pathologists, physiologists and physiological chemists have spent months and years in obtaining. Information available alike to the family doctor and to the specialist. But with all the modern, valuable and ofttimes necessary laboratory tests, the patient's tongue, the jaundiced eye and the mental condition continue to be reliable guides in the making of a diagnosis.

The encyclopedic number of changes in the bodies of patients suffering from chronic cardiovascular diseases are a challenge to the ability of the physician to make a comprehensive diagnosis and are a test of his ingenuity in treating these patients so that they may live with a relative amount of physical and mental comfort and work with a passable degree of efficiency. The awareness of, and intelligent appraisal of these changes by the attending physician is, in many seemingly hopeless cases, rewarded by the disappearance of distressing symptoms and the ability of the patients to carry on usefully within the threshold of their endurance.

The making of a comprehensive diagnosis is an outstanding example of the evolution of the practice of medicine. It means a partial return to the simple technique of the old-time doctor, plus the making of a permanent record of the history and findings.

When preventive medicine curtailed the occurrence of acute infections, a new type of medicine was born. The old-time doctor was able to tell the difference between tonsilitis and diphtheria, but carefully-made cultures often showed diphtheria bacilli in the throats of children suffering from a simple tonsilitis and the clinical diagnosis was branded unreliable.

The time-consuming work of obtaining a reliable history, the detailed study and recording of the description of the normal, and departure from the normal of all tissues and organs available to the scrutiny of the five senses is the initial step to the making of those laboratory

tests necessary to prove or disprove the clinical diagnosis and the avoidance of making tests that are unnecessary and add to the expense to the patient.

The consultants, appreciating the futility of death bed studies, were the first to practice the new type of medicine. The first attempt of the family doctor to practice modern medicine was to depend almost entirely upon laboratory findings in the making of a diagnosis, but he soon learned the shortcomings of that procedure and adopted the methods of the consultants. With the history, the physical findings and the laboratory reports before him, the physician can make a leisurely study of all the evidence and usually can make a diagnosis that cannot be successfully denied.

Evolution is a halting step behind any discovery. Evolution of the diagnosis and treatment of conditions detrimental to any tissue of the human body is dependent largely upon the evolution of the mental processes of the individual physician, the discovery of toxic agents, chemical and bacterial, and the invention of mechanical instruments and machines that aid in determining the one and administering the other.

We now have many mechanical aids that give proof of the occurrence of tissue changes as convincing and indisputable as Koch's four rules. The sphygmomanometer, the stethoscope and the ophthalmoscope are available to all physicians as bedside and office equipment that do not require long and special study for the interpretation of what they reveal. The electrocardiograph and X-ray machines confirm and add to the information gained from physical examination and the use of the simpler bedside equipment.

The study of the cardiovascular system began with the work of William Harvey who made known his discovery of the circulation of the blood in 1616. A century and a half passed before practicing physicians began to sense the significance of his careful and painstaking work. His discovery was the first step in developing the information that led the medical profession to understand the relation of the heart and the blood vessels to many symptoms, both subjective and objective, once considered disease entities. To the minds of many physicians of the 17th century, dropsy, cough, and those cases of jaundice due to aneurysms, bore no relation to cardiovascular disease.

Harvey's discovery was made about eight years before the birth of Thomas Sydenham, England's Osler of his day. In Sydenham's "Practice of Medicine," written in Latin in the latter part of the 18th century, there is no mention made of heart disease. He gives a lengthy discussion on the subject of dropsy, but says nothing of its relation to the heart and the vascular system.

In 1755 there appeared two small volumes entitled,

THE PRACTICE
OF
PHYSIC
FOUNDED ON PRINCIPLES IN
PHYSIOLOGY AND PATHOLOGY
HITHERTO UNAPPLIED IN
PHYSICAL INQUIRIES
John Shebbeare, Reg. Acad, Scient, Paris, Soc.

This forerunner of text books on physiology is a strange mixture of philosophical speculations and commendable experiments undertaken to discover the cause of the heart beat. Shebbeare, searching for the cause of the heart beat, used sharp pointed instruments and the electrical machines of that day to stimulate contractions on the animal heart. Not solving the problems by these experiments, Shebbeare decided to subscribe to the accepted belief that some mysterious force known as vital heat, acting through the blood stream, initiated the contractions of the auricles and ventricles. Clinically, he observed the hardening of the arteries and correctly surmised that the condition is due to changes in the vessel walls.

Auenbruegger, in 1761, published the result of his studies on the proper method of applying percussion as an aid to physical diagnosis. Although this method of adding to our diagnostic knowledge of the position and size of the heart and aorta has been supplanted by the accurate revelations of the fluoroscopic screen and film, percussion continues to be a measure of much value in both acute and chronic pathological conditions affecting the chest and abdomen. Perhaps its greatest claim to usefulness as a

forward step in the progress of the science of diagnosis of cardiovascular diseases is the fact that its application necessitated the baring of the patient's skin, which long after Auenbruegger's time was considered an indecent procedure.

Willian Heberden, in 1766, described for all time the symptoms of angina pectoris. Heberden states that after he had observed the symptoms in a number of patients he searched the literature for information on the condition but was not able to find any mention of the subject.

Benjamin Rush, one of the physicians who signed the Declaration of Independence, observed and wrote about the part played by the emotions and extra physical exertion on the integrity of the heart. He noted that many of the dead found on the battlefields of the American Revolution had not suffered from any wounds. He cites the case of the aged doorkeeper of the Continental Congress who dropped dead when news of the surrender of Cornwallis reached Philadelphia.

Lecturing in the time of the first Napoleon, Corvisart discusses pericarditis and carditis. He made post-mortem studies of patients who had suffered from those conditions, and cardiovascular changes were recognized as the cause of symptoms earlier physicians had considered disease entities.

Laennec, in 1816, made the first stethoscope out of paper. The advantage of this instrument over direct auscultation was at once appreciated and its use by physicians very soon became general, but such is the power of tradition that teachers in the medical schools in the closing years of the nineteenth century were discussing with the medical students the supposed advantages of direct auscultation over the use of the stethoscope. Laennec's discovery stimulated the search for knowledge of cardio-vascular diseases, but delayed the proper conception of heart disease by magnifying in the minds of physicians the importance of murmurs. Until, and after the MacKenzie awkening, teachers of internal medicine revelled in the study of murmurs. They made fine distinctions between the different types, their timing, and their supposed significance. They wrote voluminously and talked a great deal about the importance of presystolic, post-systolic, and pre and post-diastolic murmurs. The medical students were able to hear only a few of the murmurs that the professors described, but generously ascribed their inability to sense the time and character of the murmurs to their own lack of auditory acuity and mental ineptness.

In 1840, the first discovery of the conducting tissue in the heart was made by Purkinje, the indefatigable searcher for anatomical treasures. In considering the evolution of the diagnosis of heart disease, Purkinje, although he did not know the function of the cells that bear his name, deserves credit for starting the chain of events that led to our present knowledge of the mechanism of the heart beat. His discovery fanned the flame of curiosity in the minds of other investigators, a curiosity that led to the discovery of the bundle of His in 1893, the node of Tawarra in 1906, and the starting place for the contraction impulse of the normal heart, the sino-auriculo node, or the node of Keith and Flack, discovered in 1907. Thus was concluded the search for the origin of the heart beat begun by John Shebbeare one hundred and fifty years before.

In 1856 Kolliker and Muller made the discovery that when a frog's heart contracted it produced an electric current.

In 1887, Waller applied electrodes to the front and back of the chest, connected them with a capillary electrometer and succeeded in making some crude but inaccurate tracings.

MacKenzie, in 1892, fifty years after Purkinje's contribution, published studies of the cardiovascular system, that were a revelation to physicians of that period. MacKenzie placed murmurs in their proper role of importance and taught the medical profession to center its attention on the waning integrity of the heart muscle. He illustrated his conception of cardiovascular disease by recording arterial and venous tracings.

Roentgen published his studies relative to the penetration of X-rays in 1893. It was several years before roentgenologists, with improved machines, developed a technique for taking accurate pictures of the heart and aorta. The fluoroscope and films reveal both the geography and physiography of the thorax, the position and deformities of the heart and the aorta, and the increased pulsations indicating the presence of aneurysms. The film is a permanent record of some of the revelations of the fluoroscopic screen.

The next step in the progress toward correct diagnosis of heart pathology was the invention of the electro-cardiograph in 1903 by Einthoven, the Dutch physiologist. Einthoven persuaded Sir Thomas Lewis to attempt to determine the value of the electrocardiogram as an aid in the diagnosis of heart disease. Lewis and his associates devoted two years to experimental work on animals and clinical work on patients. The value and accuracy of the electrocardiogram was satisfactorily demonstrated. The original work done by Lewis has been repeated by many other workers and much has been added of diagnostic value. The electrocardiograph and the X-ray machine are complementary to each other and no heart examination is satisfactory or complete unless these mechanical aids have been used. In many cases they are of more importance in the establishment of a cardiovascular diagnosis than the sphygomanometer, stethoscope and ophthalmoscope. Einthoven demonstrated the making of phonocardiograms in 1907.

The most dramatic contribution to the diagnosis of heart disease was the chapter on coronary thrombosis, written by James B. Herrick in 1912. Herrick's discovery was the result of clinical and post-mortem studies.

One of the strange things in the history of medicine was the failure of the old-world physicians to connect the occluded coronary arteries, found at post-mortem, with this tragic disease. Doctor Herrick was the first physician in Chicago to own an electrocardiograph. He observed the characteristic curve of T_1, but, realizing that at that time the electrocardiogram was nothing more than a Chinese laundry ticket to the medical profession, failed to make his discovery known.

Pardee was the first student of the electrocardiogram to describe this curve in the medical literature and it has since been known as the Pardee curve.

Those interested in electrocardiography soon learned that there are many variations from the classical, first-recognized clinical symptoms of coronary thrombosis. The excruciating an devastating pain in the chest, which radiates to the arm or arms, causing the patient to thresh around in bed or walk about the room bitterly complaining of the continuous and distressing pain, is not the most common. We now know that some patients die quietly and suddenly with no evidence of any suffering. Some have moderate pain and air hunger and some have overshadowing abdominal symptoms that may completely deceive the puzzled physician. I have observed that radiation of the pain to throat or neck is often of more serious consequence than when the pain is referred to the arm or arms. The examining physician should inquire with most scrupulous care as to whether or not the pain is behind the sternum or is the frequently occurring precordial pain often due to gastrointestinal disturbance.

In considering the evolution of the diagnosis and treatment of cardiovascular disease, it has been amply proved that no mechanical aid replaces the careful history and painstaking physical examination that should always constitute the first steps in making a comprehensive diagnosis of cardiovascular disease. The recorded history, the result of the physical examination and the laboratory findings are the blueprints necessary to intelligent treatment of the cardiovascular patient whose useful days are to be prolonged.

TREATMENT

In the entire history of medicine the outstanding contribution to the treatment of cardiovascular diseases was the discovery of the effect of infectious diseases that so commonly are contracted by children. When this discovery was made it had to be sold to the general medical profession and in turn sold by them to a surprised and doubting public. Parents rebelled at a program of bed rest. The seeming absurdity (to them) of keeping a child in bed for three or four months and restricting its physical activities for three or four years, aroused their antagonism and temporarily injured the standing of the physician who advised a program of that kind. A large part of the public remains unconvinced and the future health of the rheumatic child is not properly safeguarded.

If in the treatment of cardiovascular diseases three conditions are kept in mind, the attending physician will be the better able to arrange his items of treatment and happier results will be obtained. These three conditions are the depressed heart, the overstimulated heart and the vascular supply to the body and to the heart

itself. In some cases no sharp line can be drawn between the depressed heart and the overstimulated heart. Modern treatment has the advantage of a better understanding by physicians of the effect of many factors that tend to increase the work of the heart and do injury to the blood vessels. Relief or amelioration of these unfavorable conditions will often eliminate the necessity of administering stimulating drugs to an overworked heart. Another advancement is the growing appreciation that an aortitis may simulate heart disease.

A better understanding of the action and limitations of digitalis contributes much to the proper treatment of heart disease. When edema is present digitalis is no longer considered the first remedy to relieve the over-burdened heart. In the light of our present knowledge of the physiology of the cardiovascular system, the past abuse of so valuable a drug as digitalis is becoming apparent to the entire medical profession. Except in those cases where fibrillation or flutter are factors with which the physician must reckon, it is doubtful if digitalis has any considerable place in the treatment of heart disease.

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ENDOSCOPY IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE CHEST

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Introduction. The term endoscopy may be applied to any examination involving instrumental inspection within an organ or particular body cavity. Bronchoscopy and esophagoscopy are thus but examples of a number of special procedures which included gastroscopy, peritoneoscopy, cystoscopy, sigmoidoscopy and others.

Just twenty-five years ago Dr. Friedberg, Sr. read a paper before this group entitled "Foreign Bodies in the Respiratory Tract."[1] At that time the removal of foreign bodies constituted the chief indication for bronchoscopy and esophagoscopy and the diagnostic possibilities of these methods were just beginning to be explored. Today the situation is reversed in that foreign body cases comprise but a small percentage of all patients seen and treated in bronchoscopic clinics while diagnosis and therapy account for the remainder. It has been repeatedly emphasized that the combined efforts of internist, roentgenologist, pathologist, bronchoscopist and surgeon are prerequisites for efficiency in this work. Realization of this has doubtless accounted for the increasing importance of bronchoesophagoscopy in the diagnosis and treatment of diseases of the chest. Furthermore, the rapid progress made by thoracic surgeons in recent years carries an added necessity for early accurate diagnosis of diseases previously considered hopeless but now definitely amenable to surgical eradication.

No discussion of this subject would be complete without tribute to Dr. Chevalier Jackson whose mechanical genius has been largely responsible for the instruments most widely used today and whose teachings have been spread to all parts of the world by many students who have been privileged to study with him.

TECHNIQUE

Local anesthesia, in the form of pontocain or larocain applied to mucous membrane surfaces, is most commonly used. Only in rare instances is general anesthesia employed. Children are usually examined without any anesthetic agent. Adults submitting to their first diagnostic procedure often have basal preparation consisting of a barbiturate compound plus morphine and scopolamine in dosages based upon the patient's size and physique. We feel that this allays apprehension and contributes to relaxation without producing any undesirable side effects.

The need for well-trained assistants and adequate equipment, as in any surgical technique, is second only in importance to the necessity for special training and experience on the part of the endoscopist.

LARYGNEAL AND TRACHEAL DISEASES

Without attempting to enumerate all of the various laryngeal and tracheal conditions encountered, it can be stated that a direct specular examination is indicated either as a diagnostic or therapeutic adjunct in the majority of cases in this group. One might cite the necessity for biopsy and for subglottic inspection of the larynx prior to laryngofissure or laryngectomy for car-

From the Department of Otolaryngology, Rush Medical College and Presbyterian Hospital. Read before Section on Eye, Ear, Nose & Throat, 101st Annual Meeting The Illinois State Medical Society, May 20, 1941, Chicago.

cinoma. In children, direct exposure of the larynx requires but a few seconds and is of the utmost importance, for instance, in infectious diseases where obstructive dyspnea demands immediate intubation or tracheotomy. Intubation may be contraindicated in marked laryngeal edema, or, if needed, may be performed easily under direct vision through the laryngoscope. A small bronchoscope or straightened "life-saver" tube passed into the trachea of an urgently-dyspneic individual provides a much-needed airway and an opportunity for an unhurried, carefully-executed tracheotomy. This technic has done much to eliminate the emergency factor in the average case of obstructive dyspnea. Tracheotomy openings may be utilized for the passage of a bronchoscope and the removal of crusts and inspissated secretion from the tracheobronchial tree.

G.S., aged 10, developed stridor, retraction of the accessory muscles of respiration, restlessness and cyanosis 24 hours after the onset of sore throat and fever. After direct inspection of the larynx and trachea a diagnosis of acute laryngotracheobronchitis was made. The bronchoscope was left in situ and tracheotomy performed. In three days the temperature was normal and the patient could breathe with the tracheotomy tube partially corked. Several days later a cough and fever developed and signs of consolidation were noted over the right lung field posteriorly. There was roentgen evidence suggesting atelectasis. Bronchoscopic examination through the tracheotomy opening revealed obstruction of the right lower lobe bronchial orifice by a mucus plug. This was aspirated, the temperature fell to normal and roentgenograms showed clearing of the chest. The tracheotomy tube was removed several days later and the boy was discharged from the hospital.

BRONCHOPULMONARY DISEASES

Diagnostic bronchoscopy is indicated in almost all forms of pulmonary suppuration, in suspected foreign bodies, when uncontaminated cultures are desired, for biopsy purposes, in most cases of asthma, in instances of unexplained cough, hemoptysis, atelectasis or obstructive emphysema and in some forms of pulmonary tuberculosis. Care must be taken however, not to allow enthusiasm to obscure surgical judgment in the choice of patients. Moribund individuals, patients with greatly impaired vital capacity, (due to multiple abscesses or long-standing pulmonary fibrosis) with advanced cardiovascular disease, aortic aneurysm, acute exudative tuberculosis or recent severe pulmonary hemorrhage should not be subjected to bronchoscopy except in the presence of foreign body.[2]

Bronchiectasis. Too often the patient with bronchiectasis is denied the benefit of available diagnostic methods. Every bronchoscopist knows that bronchiectasis may be the result of an unrecognized foreign body. Bronchoscopy may be useful in removing obstructive granulations and this should always be done prior to lipiodal instillation for accurate mapping and localization of the diseased segments. Many patients report at intervals for bronchoscopic aspiration and the symptomatic relief thereby afforded.

K.K. aged 25, had been troubled by a cough productive of 12-14 ounces of foul sputum daily for many years. Lipiodal instillation was carried out, each lung being studied separately on antero-posterior and lateral views. The bronchiectasis was localized to the left lower pulmonary lobe, with only a trace of dilatation in one or two branches on the right side. Lobectomy was decided upon and performed by Dr. J. M. Dorsey.

The roentgen ray may be misleading and diagnosis established only by bronchoscopy.

J.H. aged 65, had been having a productive cough and recurrent hemoptysis for 3 years. The roentgenographic diagnosis was bronchiogenic carcinoma and a course of roentgen therapy had been given without any change in symptoms or roentgen findings. Bronchoscopy and bronchography proved the lesion to be bronchiectasis. The patient has remained symptom free for one year with occasional bronchoscopic drainage. Obviously the diagnosis of carcinoma cannot be considered accurate without positive microscopic evidence.

Asthma. Opinions vary as to the therapeutic value of bronchoscopy in bronchial asthma. Aspiration of secretions, removal of uncontaminated specimens for bacteriological study and preparation of vaccines certainly warrant a trial. More important, however, is the diagnostic aspect of this condition. For wheezing respiration is not only characteristic of asthma but may be due to bronchial stenosis, neoplasm, granulation tissue or foreign body.[3] We feel that every asthmatic patient is entitled to diagnostic bronchoscopy.

Pulmonary Abscess. The role of bronchoscopy in this condition is well-established but it should be remembered that the possibilities of effecting a cure by bronchoscopy alone decreases with the chronicity of the process. The best results are observed in cases where bronchoscopic drainage has been instituted immediately after the onset of symptoms.

Here again it is important to exclude other conditions which may simulate lung abscess roentgenologically or to which an abscess may be secondary. Of several such cases seen recently, two proved to be bronchiogenic carcinoma.

Postoperative Pulmonary Complications. Postoperative pneumonia was formerly a rather common diagnosis. We know now that many of these cases are actually due to atelectasis or its sequelae. Prompt bronchoscopic aspiration will usually restore ventilation in atelectasis and is of diagnostic and therapeutic value in other complications.[4]

R.S. aged 20, had an operation for undescended testicle, ethylene anesthesia being used. On the following day cough and signs of left lung consolidation appeared. The usual methods of postural changes and carbon dioxide-oxygen inhalations were employed with only slight benefit for 24 hours. At the end of a 48 hour period the patient's temperature reached 103 F., consolidation was still present and the sputum, previously mucoid, was becoming purulent. At this point the plea of the bronchoscopist was heeded. After thorough aspiration of a large quantity of mucopurulent secretion from the left bronchus, the patient's condition improved and subsequent recovery was uneventful.

Neoplasms. There has been a striking increase in the incidence of bronchiogenic carcinoma in the past thirty years. Whether the increase is actual or relative is a disputed question but the fact remains that roughly ten per cent of all deaths due to malignancy are caused by primary lung tumors.[5] Cough, the most constant initial symptom, is so commonplace that it does not receive just recognition. Hemoptysis is often disregarded when tuberculosis bacilli cannot be found in the sputum. Roentgen evidence of pulmonary pathology appears only after bronchial obstruction takes place or hilar metastases occur. Removal of neoplasms of the lung with permanent cure is no longer speculative but, as Graham has recently shown, more than 80 per cent of the patients are permitted to progress beyond surgical help before being seen by a thoracic surgeon.[6] This lack of earlier diagnoses is indeed regrettable when one considers that 75 per cent of bronchial neoplasms are within the endoscopic field of visualization. A positive biopsy is prerequisite to surgery in these cases although exploratory thoractomy should be considered in the same manner as is exploratory laparotomy.

C.G. aged 64, had had cough and purulent sputum for 4 months following thrombophlebitis. Roentgenogram was indefinite but suggested an abscess in the right upper pulmonary lobe. On bronchoscopic examination a minute projection of tissue was removed from the upper lobe orifice and found to contain carcinoma cells. In routine examination for metastases an area of rarefaction was noted in the skull. Surgery was contraindicated but on autopsy examination 5 months later the neoplasm was found sharply limited to the right upper lobe and had not even involved the trachea.

In addition to carcinoma, the so-called benign adenomas constitute an important clinical group since these lesions are clinically malignant in their effect.

Miscellaneous Conditions. Fungus diseases of the lung are subject to bronchoscopic diagnosis and treatment. Myerson has recently outlined the pathologic sequence of events in tracheobronchial tuberculosis and has demonstrated the important role of bronchoscopy in connection with tuberculosis therapy.[7] Bronchoscopic aspiration will occasionally yield positive evidence of tuberculosis when routine sputum examinations are negative.

Bronchography. The accurate mapping of lung segments by roentgenograms after the instillation of iodized oil is an important adjunct to bronchoscopy. We prefer to introduce the solution through the bronchoscope in children or, in adults, through a catheter previously passed into the larynx. This is carried out in a fluroscopic room where the position of the patient can be varied in order to fill any desired lobe and where "spot" films may be taken. Only one lung at a time is investigated, 8 to 10 cc. of oil being used. After completion of fluoroscopic introduction and study, routine antero-posterior and lateral chest films are made. If the oil reaches both lungs, the details of the important lateral view will be obscured.

The oil is usually coughed up immediately thereafter by the patient and no ill-effects have been experienced from its use in diagnostic procedures.

ESOPHAGEAL DISEASE

In diseases of the esophagus the two most significant objective diagnostic methods are roentgen ray examination and esophagoscopy. The latter should precede any form of therapy and eliminates any need for dangerous and unscientific blind bouginage.

Anomalies. Congenital malformation involving the trachea and esophagus are accessible to diagnostic endoscopy. The prognosis in cases of congenital atresia is poor. Congenital short esophagus associated with thoracic stomach should be studied carefully and may require treatment for stenosis, biopsy for confirmation or suspected malignancy.

Stricture. Accidents and suicidal attempts still account for many instances of esophageal stricture. Esophagoscopy may be performed after acute symptoms have subsided in any effort to prevent stricture formation. Once a stricture has formed, much care and perseverance is required to restore a patent lumen. Dilatations from above will often suffice but if a gastrostomy has been necessary, retrograde dilatations may be necessary.

P.O. aged 5, had a gastrostomy performed at the age of 2 because of esophageal stenosis following the ingestion of lye. When first seen at the age of 4, only a minute stream of thin barium passed into the stomach. Her nutrition was excellent due to a perfectly-functioning gastrostomy. A bougie could not be passed into the strictured area from above.

Under biplane fluoroscopy an esophagoscope was introduced through the mouth and another through the gastrostomy opening. The instruments almost met but fibrous tissue separated their tips. No lumen could be found and filiform bougies could not be passed through a stricture which seemed analogous to a prone S. Because dye by mouth could be recovered from the stomach, it was deemed inadvisable to attempt forceful penetration of the stricture. After almost a year of effort, we finally succeeded in getting a minute string through the stricture. This was recovered through the gastrostomy and retrograde dilatations were begun. The patient has now had permanent closure of the gastrostomy.

Cardiospasm. Since roentgenograms of this condition may be mistaken for malignancy or stricture and vice versa, direct inspection of the esophagus is always indicated in lesions which produce swallowing dysfunction.

Diverticula. Inspection of pulsion diverticular sacs for neoplasm, aspiration prior to surgery as well as actual esophagoscopic demonstration of the pouch and its attachment during surgical removal are now routine procedures. Traction diverticula are usually asymptomatic and require no treatment.

Neoplasms. Benign lesions of the esophagus can often be removed through the esophagoscope. In malignant lesions the problem is comparable to bronchiogenic carcinoma in that the disease is frequently advanced before diagnosis is made. In carcinoma of the esophagus, thoracic surgery has changed the previously-hopeless outlook. Unfortunately the esophagoscope is too seldom employed for early diagnosis, and "functional dysphagia" and "globus hystericus" are still used to designate conditions which eventually prove to be organic in nature. Routine esophagoscopy in all patients with dysphagia shares an importance equal to routine bronchoscopy for unexplained cough if further progress in the cure of early thoracic cancer is to be anticipated.

Miscellaneous. Tuberculosis, syphilis, leukoplakia and varices may be revealed by direct inspection of the esophagus. A method for endoscopic treatment of varices by injection of sclerosing solution has recently been proposed.[8] In addition, laryngeal, pulmonary and mediastinal diseases may produce esophageal symptoms by extension or compression. Complete diagnoses may be influential in the determination of therapy and prognosis of extra-esophageal lesions.

CONCLUSIONS

1. Direct examination of the larynx, trachea, bronchi and esophagus is indispensable for accurate diagnosis.

2. Endoscopic procedures frequently offer the most practical and effective therapy in certain diseases of the chest.

3. Routine endoscopic examination for obscure cough and dysphagia is necessary for early diagnosis if progress in the cure of thoracic malignancy by surgery is to be anticipated.

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DISCUSSION

Dr. John M. Dorsey, Chicago: I would like to commend Dr. Friedberg on his presentation of this subject to you. I think it is a very important one — very important from the standpoint of the thoracic surgeon, and I am sure it is important to you men who are interested in the subject as a specialty and who are able to do so much in increasing the use of the endoscope in the various problems to which it contributes.

I should like to emphasize the use of the endoscope and its value to the surgeon in the care of pharygoesophageal diverticulum. It aids particularly in visualization of the sac.

Secondly, bronchoscopy is of great value postoperatively, particularly in the treatment of postoperative massive collapse, of which Dr. Friedberg spoke. It should be used earlier. It can be done with very little trouble in good hands and there should be no fear or hesitancy in advising it. I am sure you will all concur in that.

The problem from the standpoint of thoracic surgery, in which I am most interested, is the cancer problem. Bronchiogenic carcinoma in the past has been felt to be a relative rarity. Recently, however, in statistics from the City Hospital in New Orleans, Ochsner and DeBakey have shown this to be one of the most common cancers. That throws a new light on the problem. There are two steps in arriving at a diagnosis. The first is to suspect it. I am afraid our records in the past as detectives have been poor because often, when diagnosis has been made, the lesion has been so far advanced that therapy is of no value. The second step is obtaining conclusive evidence through bronchoscopic biopsy. I would like to go on record as advocating bronchoscopy early in the investigation of any thoracic symptoms, particularly tightness in the chest, wheezing, coughing, etc.

I would like to show some slides to emphasize what has been said. Seventy-five per cent of cancers of the bronchi are found in the main division of the bronchial tree well within the scope of examination. The surgical mortality of Graham and Blades was 37 per cent. It must be remembered that the medical mortality is 100 percent, and for that reason we should be alert to recommend the only successful therapy we have — surgical resection.

Dr. Stanton A. Friedberg, Chicago (closing): I want to thank Dr. Dorsey for his discussion. He is the thoracic surgeon with whom most of this work has been done. I should also like to reemphasize the importance of early cough in bronchiogenic carcinoma. Too often, questioning of the patients reveals that their cough had been present for six or seven months. Then, as shown on the slides, the lesion is too far advanced for any consideration of surgery. The fact that over eighty per cent of these patients present inoperable lesions when first seen makes it imperative that earlier diagnoses be made.

ELECTRICALLY INDUCED CONVULSIONS FOR THE TREATMENT OF THE FUNCTIONAL PSYCHOSES

J. V. Edlin, M.D.
CHICAGO

Since the introduction of insulin and metrazol as therapeutic agents in the treatment of functional mental disorders, there has been an ever widening field of search for that therapy which will bring a maximum percentage of recoveries with a minimum of body damage.

Several differences in the treatment have been devised in order to obviate the undesirable effects of metrazol. Bennett[1] with curare, Low[2] with picrotoxin, the author[3] with scopolamine and others with various devices for the limitation of motion. Despite the unpleasantness and the complications which occur with this therapy, many administer it because they believe that the percentage of recoveries are noticeably higher than the percentage of spontaneous remissions.

In 1938, Cerletti and Bini[4] reported that electrical currents applied to the head brought about an immediate loss of consciousness and that a convulsion followed in from two to four seconds. They further reported that the patients had no recollection of their experience and that the state of excitation frequently observed with metrazol was absent.

Fleming, Golla and Walter[5] applied the electrical therapy and stated that the chief advantage for electrical shock over metrazol was the instantaneous loss of consciousness and an absence of surgical complications such as dislocations.

A. Von Braunmühl[6] believes that the immediate loss of consciousness prevents unpleasant sensations and mentions the advantage of not having to puncture veins. He believes that the treatments, if given prophylactically every year or two, may prevent relapses and that experiences, heretofore, have proved it harmless. F. E. Fox[7] also mentions "maintenance" shocks so that remissions may be prolonged indefinitely. Bingel and Meggenderfer,[8] Sogliani and Giorgio,[9] do not observe any material difference in

From the Chicago State Hospital, Edward F. Dombrowski, M.D., Managing Officer.
Presented before the Physicians' Association, Department of Public Welfare, State of Illinois, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 20, 1941.

the incidents of complications with the two methods. L. Kalinowsky,[10] originally thought that electrically induced convulsions might cause cerebral damage but later in his "more shocks" withdrew it. D. Bair,[11] has cited two cases of vertebral fractures and Gonda,[12] mentions a fracture of both humeri in one of his patients.

The Machine: — The author uses the Offner Electric Shock Therapy Aparatus. It contains a number of provisions necessary to insure the proper value of treatment current. The patient's resistance is first determined by a high frequency (7,000 cycle) "test" current. Offner claims that the high frequency has been found necessary to eliminate the effect of the tissue polarizability which gave rise to the variability in the current supplied by earlier instruments.

A relatively high resistance (500 ohms) is inserted in the patient circuit. This tends to "swamp out" any small changes in the patient's resistance, maintaining the current at the desired value. An over-current relay is inserted in the patient circuit. This terminates the treatment if the applied current exceeds the desired value.

The treatment cannot be given until the "test" current has first been applied, giving a reading of the treatment current to be given. Another safety feature is the treatment switch, which not only controls the timer, but also the treatment current directly. Thus, if the timer should fail during a treatment, the current will not be given except as long as the switch is depressed. This will prevent the possibility of the occurrence of a serious accident from such a failure as may occur with some other machines.

Offner believes that the control of current, rather than voltage, is distinctly advantageous, in that it is necessarily the former, rather than latter of itself, that provides the treatment. Thus, whereas two patients may require the same treatment current to obtain convulsions, the thicker skull and skin of one may mean that the higher voltage will be required to obtain this current than with the other. This factor is automatically compensated by the test circuit in the machine.

Technique: — The patient receives no breakfast on Monday and Thursday of each week. One hour before electrical therapy is administered, he is given 1/100 of scopolamine by hypo and put to bed. When it is his turn he is led into the treatment room by an attendant. (The patients at the Chicago State Hospital have been treated with and without scopolamine on several occasions and the author is of the opinion that the patient is more cooperative and less apprehensive although the apprehension is slight, when the sedation is used). The patient is placed in a supine position on a therapy bed which is covered by a rubber sheet. Instead of the conventional spring, this bed has nothing but boards under the mattress. A small pillow is placed under the patients back approximately between the ninth thoracic to the third lumbar vertebrae. The attendant in charge of the patient's head, rubs saline jelly over the temples which have previously been clipped of its hair and applies the electrodes in their respective positions by means of an elastic band such as one uses on an electrocardiogram machine. The electrodes are 1¼ x 1¼ inches square. One attendant wearing rubber gloves, although rubber gloves do not appear necessary, applies pressure on both knees to prevent flexion and abduction. Two attendants fold the patient's arms across his chest so that one wrist rests upon the other directly over the sternum. Pressure is then applied over the head of the humerus in order to prevent dislocation. (And with the prevention of dislocations, the author has not encoutered any fractures). The pressure should be directed in such fashion that the force is always pushing the head of the humerus directly towards the opposite head. Both attendants then apply pressure on the wrist against the sternum. Because the treatment bed has boards instead of a spring, there is no give and acute flexion of the spine which has already been somewhat limited by the pillow under the back, is still further lessened by the manuel fixation. Spinal fractures are, therefore, almost eliminated. (Ten patients picked at random from the treatment group show no fractures). Prior to the press of the electrical treatment button, the attendant inserts a rubber protector between the teeth so as to protect the lips, teeth and tongue. He has been trained to grasp the chin when the electrical circuit is broken and to apply pressure

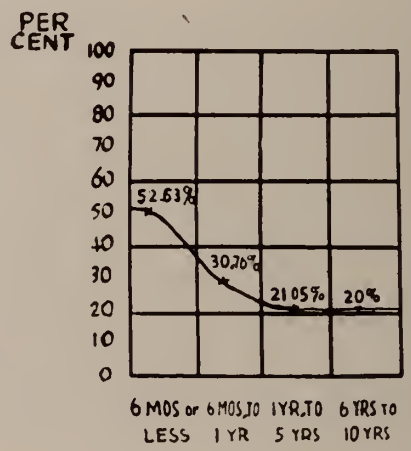
in that direction which will keep the mouth closed. In several seconds, this pressure is no longer needed but because the pressure was applied early, subluxation of the temperomandibular joint becomes a rarity.

The Convulsion: — The milleamperage necessary to produce a convulsion has consistently been between 350 to 500. The time duration, .5 of a second. Young adults will rarely have a petit mal attack with the above dosage but patients over 45 years of age frequently require not only the 500 milleamperes, but the time duration may have to be increased to .7 or 1. second. The petit mal attack, electrically induced, differs from the sub-minimol dose of metrazol. There is no confused struggle of a terror stricken patient but rather a brief loss of consciousness characterized by cessation of respiration which lasts from seconds to a full minute. During this state, the patient may make many swallowing motions. When the patient takes his first breath, consciousness returns.

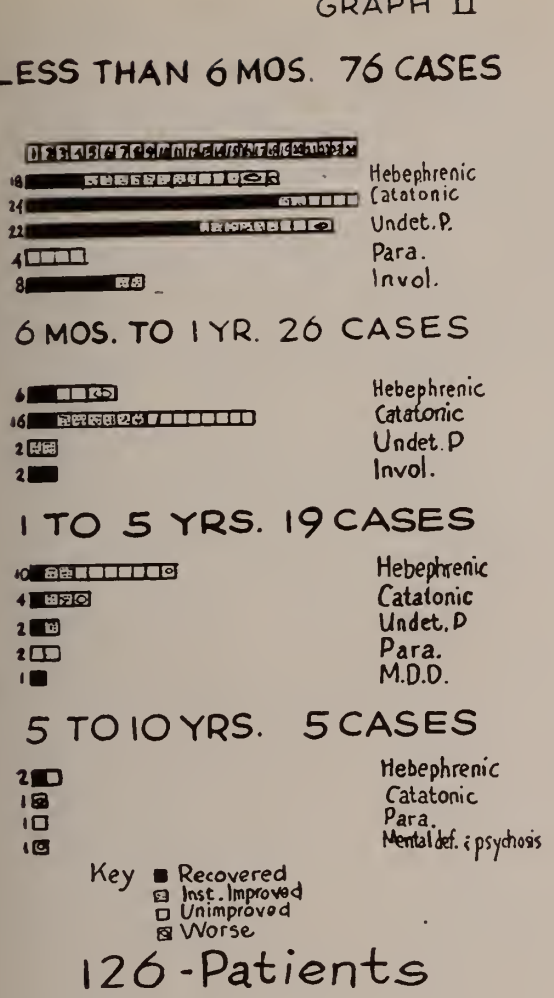
When a convulsion is induced, consciousness is lost with the press of the treatment button. The patient has a cough or expiratory cry and instead of a short clonic phase as with metrazol, immediately goes into a tonic state. Typical clonic convulsions follow the tonic seizure and differs from idiopathic epilepsy only in that the seizure induced electrically, appears to be much more severe. With the instantaneous loss of consciousness and the tonic surge, the mouth begins to open but it is held in check by the attendant. At the same time, there is a conjugate deviation of the pupils upwards and to the right or the left. As the clonic convulsion reaches the point of termination, the patient becomes progressively more cyanotic. This is followed by a brief apnea and then deep inspiratory action. The patient remains unconscious for three to ten minutes and then is confused from several minutes to hours. This confusional state which simulates a memory defect, appears to last much longer in some patients than with metrazol. One patient, a pharmacist, described the confusion by telling the author that "each attack seems to produce an amnesia". At the termination of the convulsion, respiratory failure appeared to be imminent in two patients who had a prolonged apnea, but they resumed their respiration without the aid of stimulants or artificial respiration.

GRAPH I

PER CENT RECOVERIES OF ALL CASES TREATED



Results: — One hundred and twenty-six patients received electrical convulsive therapy. The onset of their psychosis ranged from less than 6 months to 10 years and included all of the functional psychosis with the exception of manic-depressive manic, there being no patients of this type available during therapy. Graph 1 is self-explanatory. Patients who were mentally ill for less than 6 months, showed a 52.63% recovery rate. Patients from 6 months to one year, showed 30.76%, patients from 1 to five years, 21.05% and 6 to ten years, showed 20%. It is strikingly noticeable in Graph II that the greatest percentage of the recoveries were shown by patients suffering from involutional melancholia. Eight out of ten made a complete recovery. The next group showing the largest percentage of recoveries were catatonics. Out of twenty-four patients having a mental illness of less than 6 months, eighteen recovered, two were institutionally improved and four showed no improvement. With eighteen hebephrenics mentally ill less than 6 months, four



recovered, six showed institutional improvement, four were not improved and four appeared to be definitely worse than they were prior to the electrical therapy. Twenty-two patients mentally ill for less than 6 months and classified as dementia praecox, undetermined in type, because of combined hebephrenic and catatonic features, showed twelve recoveries, six institutional improvements, two unimproved and two who appeared worse than they were prior to the beginning of electrical therapy. Four paranoid patients were treated and none showed improvement. Of those twenty-six patients who were ill 6 months to 1 year, the following results are noted: six hebephrenics showed two recoveries, two unimproved and two were worse. Of sixteen catatonics, two recovered, six were institutionally improved and eight showed no improvement. Two undetermined types of dementia praecox showed two institutional improvements. Two cases of involutional melancholia, both recovered. Those ill 1 to 5 years, nineteen cases, give the following: ten hebephrenics; one recovery, two institutional improvements, six unimproved, one worse. Catatonic, four cases; one recovery, two institutional improvements, one worse. Dementia praecox, undertermined type, two cases; one recovery, one institutionally improved. Two cases of dementia praecox, paranoid in type; unimproved. One maniac depressive, depressed; recovered. From 5 to 10 years, five cases: two hebephrenics; one recovered, one unimproved. One catatonic; worse. One paranoid; no improvement. One mental defective with psychoses; worse.

The results indicate, as with metrazol and insulin, that the duration of a psychoses is important from a prognostic point of view. Those receiving therapy during the early stages, show the highest percentage of recoveries. The author recommends that patients suffering from dementia praecox, paranoid in type and hebephrenic, should receive insulin.

Comments: — Ten patients picked at random, received electrocardiograms before and after the treatment. All ten were normal prior to therapy. Immediately after therapy was discontinued, six were still normal, two showed some left ventricular preponderance, one auricular hypertrophy with heart muscle damage, and one damage to the bundle of His. Two patients having suggestive incipient pulmonary tuberculosis to auscaltation and perscussion, showed a definite increase in lung findings, one month after therapy was discontinued. Several acutely disturbed catatonics who had received massive sedation in the hydro-therapy department, were given electrical treatments and convulsions were easily obtained by increasing the amperage by 50. Two patients prior to therapy had old healed fractures, one a healed fracture of the humerus and the other a healed fracture of an elbow with ankylosis. Both patients received treatment with particular care for fixation and no new fractures occured.

Patients having appendicial scars or mid-line incisions or other surgical scars should have pressure applied during treatment because of the

terrific pull by the muscles during the tonic and clonic state during the treatment. The author finds it necessary to increase the milleamperage from the usual 400 in young adults to 500 in patients 45 years of age or over, and at times the time limit from .5 seconds to 1. second because it is more difficult to produce convulsions in an older person. Four patients who recovered with 10 treatments and then relapsed in from one to two weeks, were again given electrical therapy. They recovered with three or four treatments but again relapsed within a week. The therapy was re-instituted with a resultant recovery after a few treatments and then another relapse. Treatment was discontinued and two of the patients were worse than they were prior to the administration of the electrical therapy. Three patients classified as involutional melancholia were given electrical treatments after failings had been sent to the relatives because it appeared that they might die from exhaustion during the course of the psychoses. All three were very poor physical risks. Two recovered and one was institutionally improved. In over one thousand treatments, the author has never encountered what appeared to be a true respiratory failure. On two occasions, the patients were markedly cyanotic and had an apnea for a longer period than the others but with no stimulation by drugs or artificial respiration, they again resumed their breathing. The author detected arrhythmia in several of the patients immediately after therapy but the pulse was normal within one hour. Patients receiving electrical therapy showed a memory defect or a confusional state for a much longer period of time than the author noticed with metrazol therapy. At times, the confusional state was overtly noticeable for three weeks after therapy had been discontinued. Ten patients picked at random, received x-rays of the spine before and after treatment. No fractures were noticed after treatment. The author, however, is of the opinion that the same care in fixation is needed for electrical therapy as with metrazol therapy, particularly during the first surge that occurs with the press of the treatment button. Fully one-third of the patients receiving electrical therapy and improving to the point of where they were in excellent contact, frequently asked the author when their treatments would be terminated. They stated that they would not object to the continuation but at the same time said that it was unpleasant in some undescribable fashion. Although rubber gloves and clipping of the hair do not appear necesssary, one patient was given therapy with hair unclipped at the request of the relatives with a resultant jagged blue flame that swept down from her temple to her chin. Nothing happened, but the author was left with the impression that if any precautions for safety can be taken, they should be taken.

CONCLUSION

The percentage of recoveries in involutional melancholia, dementia praecox, catatonic, and dementia praecox, undetermined in type, definitely appear to be higher than the percentages noted with spontaneous remissions. Although the group of patients classified as dementia praecox, hebephrenic in type and paranoid was small, the results were sufficiently discouraging as to warrant the author's recommendation that they be placed on insulin therapy. The author recommends electrical therapy in preference to metrazol because of the percentage of recoveries in selected cases and the almost total absence of fear. The author believes, as does Victor L. Gonda,[12] that psychotherapy is a necessary and vital adjunct to electrical therapy.

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DISCUSSION

Dr. Lloyd H. Ziegler, Wauwatosa, Wisconsin: Dr. Edlin has given us a splendid brief account of the electric induction of grand mal as therapy for functional psychoses.

In medieval times mental patients were tortured in order that the Devil might be driven from them. Now we shock them into unconsciousness with the hope that they can be driven to better health.

Electricity has had an active part in medical science and art. The study of muscle-nerve preparations, and the reaction of degeneration are only a few well-known examples. Hitzig in 1874 used electricity to locate the motor area of the cerebral cortex. More to be remembered by all of us were the physician's offices outfitted with large static machines, the mysterious sparks from which were felt to be therapeutic in some unknown way. Such machines had scarcely disappeared before Cerletti and Bini in Italy had invented a machine (like the one described by Dr. Edlin) that would produce convulsions in man and animals by means of an electric current passed through the front half of the head. These workers were interested in the experimental production of epilepsy and it appears now that they were successful. Their work came at an opportune time to yield an interesting by-product of their research. Sakel had interested the medical profession of the entire world in the possible therapeutic effects of insulin therapy. And Meduna had noted that schizophrenics seldom have convulsions and therefore might respond to convulsive therapy. To induce convulsions he selected, from several that could have been used, a camphor-like substance, metrazol. (Paracelsus had used camphor to induce convulsions.) But metrazol proved much more valuable to depressed patients than to schizophrenics. Metrazol aroused great dread and fear in those to whom it was given. It tended to destroy veins. It was often difficult to give intravenously. Fractures and dislocations, and other complications, resulted from the convulsions. Some deaths were attributed to it. The electric method has largely overcome all of these objections, except the complications, which are being controlled by posture, belts, curare, and other methods. Therapeutically, electro-shock has no virtues that metrazol did not have.

The shock therapies are demonstrating what we had long known, that there is really no pure schizophrenia or affective disorder. Mixtures of human qualities exist in every psychiatric patient. Convulsive therapy reanimates a slowed up patient and tends to make depressive feelings disappear. It appears also to retard overactive patients and decreases their elation. It will not create emotions where few, if any, exist. It will not create energies in a person who has gradually receded to a low level of activity, or had never really been capable of activity. Shock in such patients gives only a temporary spurt.

We have given patients electro- and metrazol shock who have been known (by the encephalogram) to have cortical atrophy. They made only temporarily favorable responses on repeated trials. Whether maintenance or prophylactuc uses of electricity are practical is very questionable.

In the light of what I have said, Dr. Edlin's immediate results of treatment are understandable and correspond with other experience. A therapy such as this cannot be truly evaluated until 5 to 10 years have elapsed. If we disturb the inactive periods of life too much it is difficult to know what may happen to the person years hence.

At the recent meeting of the American Psychiatric Association at Richmond, Virginia, the round table on electric shock therapy was the most popular of all. To summarize briefly the points brought out there, I will say that thus far only 1 death has been reported. Animal experimentation with electro-shock has shown some glial nodules in the brains of sacrificed animals. These are not entirely convincing because the brains of animals are not really well known. Changes in the electro-encephalogram are known to occur and disappear slowly. Some few patients are known to be made temporarily slightly worse than they were by the treatment. It was felt that electro-shock is relatively safe in experienced hands. Curare is being used with it to spare the bones, joints, heart and blood vessels. And scopolamine does allay the anticipatory fear which is usually slight.

In conclusion, I wish to emphasize that electro-shock appears to be a valuable adjunct to therapy in that it hastens recovery in certain types of patients whose emotions or energies are not too damaged. Occupational, recreational, and psychotherapy are just as valuable as they have ever been to do the job of readjusting the patient as completely as possible. And education and habit training to fortify the integrity of growing youth seem, in the light of these newer treatments, to be more important than ever.

Dr. S. D. Klow, Jacksonville: Pertaining to the technique, when I was using Metrazol I avoided the situation where we got a petit mal convulsion and letting it stay at that. I found that the patients became worse mentally, so I repeated the injections and gave a larger injection and produced a grand mal and got good effects. Then with electric shock I did the same thing. I wonder if, when Dr. Edlin was doing this with the machine set at a certain amperage and only got a petit mal effect, whether he went ahead with a longer and higher interval and produced a grand mal. In connection with that, I wonder how often he dared repeat the convulsion at one treatment. I found sometimes that even the second did not in-

crease it enough and have given as many as three, and the highest — four. I personally found no bad results, although I did not check up with any electrocardiographic recordings to see if there was any damage.

I was surprised to hear him mention clipping the hair. I took a piece of gauze saturated with saline and applied it over the area where I had rubbed in the jelly, and put the electrodes over that. I never had any sparks, had no bad results, and avoided, particularly in women, the necessity of clipping the hair at the temples.

I never found it necessary to use scopolamine. The patients did not seem any more apprehensive than they would for the treatment of anything else you might try to do for them.

With Metrazol we did use the picrotoxin and had approximately the same results, except that with the injection treatment the patients were a little apprehensive about doing anything at all in the arm, and I found that the electric shock was much better. The majority of the patients did not even remember going into the room.

I think this is a very big factor in favor of the electric shock over Metrazol.

Discussion on paper of Dr. J. V. Edlin, "Electrically Induced Convulsions for the Treatment of the Functional Psychoses."

Dr. J. V. Edlin, Chicago, concluding: In response to Dr. Klow, when a patient received a petit mal, it all depended upon the classification and condition of the patient as to whether I decided to give that patient a grand mal immediately afterwards. If the patient was in a catatonic state and required tube feeding, I might. However, in a melancholia, the petit mal was sometimes sufficient to bring the patient out of a severe state of depression. I do not like to repeat the electrical therapy when I do not obtain the grand mal the first time because of previous experiences where some of the patients apparently got worse than they were prior to electrical therapy; and inasmuch as I do not know what is taking place in the brain, I am rather conservatively inclined about repetition.

With reference to scopolamine, it is a matter of choice. With the metrazol we had some aspirational pneumonias. The scopolamine seems to cut down on the salivation and lessen the hazard.

As regards prophylatic treatment, it would be ideal in a hospital that is as well staffed as his because the patients are also receiving trained psychotherapy, and it is psychotherapy that is so extremely necessary as an adjunct to maintaining that patient's drive. I feel that electrical therapy merely snaps them out. After that, it is up to the psychiatrist.

I appreciate the honor that Dr. Lloyd Ziegler has conferred upon me by discussing my paper.

THE PATHOLOGIST IN THE CANCER CLINIC AND IN THE HOSPITAL*

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CHICAGO

The Pathologist: The work relations in medical practice between the patient and his physician are relatively simple when the advice sought requires no considerable diagnostic effort. They become involved where a greater diagnostic study is demanded and the data obtained by physical examination are supplemented by clinical laboratory tests. Because of his training, a physician may choose to do some of these himself, or he may delegate them to a technical assistant under his supervision, or to a laboratory in charge of someone else.

When the disorder of a patient, in the opinion of his physician, demands the routine of a standard hospital, the services of an organized laboratory are available. My discussion concerns only the work relations of such an organization in the practice of medicine because they may be duplicated by commercial laboratories. The standard hospital laboratory is organized under the supervision of a physician — a graduate of a recognized medical school and with special training in pathology and preferably also in chemistry and bacteriology. He then, in the group relations, is the clinical pathologist. His training, if well rounded and with a background of clinical experience as intern or resident, will give him a sympathetic understanding of the problems confronting the doctors and their patients. He also will have some appreciation of the application of the art of the practice of medicine which as clinical pathologist may not be a large part of his experience since he deals, more often, directly with the attending physician and only indirectly with the patients.

The main responsibility of the clinical pathologist is to organize and maintain an efficient and accurate laboratory. The physical expanse of his domain and the size of his trained personnel are in proportion with the demands for

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Presented before the regular monthly meeting of the Perry County Medical Society, held at the Elk's Country Club, DuQuoin, on Thursday, October 2, 1941.

output. In some hospitals the interns complete the routine blood, urine, stomach, and stool examinations so that only the more technical procedures as in bacteriology, the chemistry of the blood, the serology and the tissue examinations are delegated to the laboratory force. In other hospitals, all of the work is assumed by a corps of laboratory workers. The clinical pathologist is responsible for the work of this group, and his organization should be developed so that from time to time he has personal checks of the laboratory tests made. The methods used, by their simplicity, should reduce to a minimum the element of human error or falsification.

While the pathologist is responsible for the entire routine work in the laboratory, his immediate participation in the procedures is in the diagnosis of surgical tissues and in the completion of postmortem examinations. His conclusions in all of these are reported to the attending physician and are recorded in the clinical records of the patients. The motive in the work of the pathologist is to determine and classify by tissue changes the disease present. Much of this is matching a composite of standard visual memory pictures against those seen in tissues. He resorts to all kinds of technical procedures, bacteriological examinations, and so on, to obtain data which will lead to a logical and correct diagnosis. The results obtained may confirm the clinical diagnosis of the attending physician; they may refute, or entirely replace the opinion expressed. In these functions the pathologist, having no or little direct contact with the patient, supplies diagnostic information which the attending physician may use with profit even though the disease, as determined by the tissue examination and in our understanding of medical practice, is considered hopeless.

These functions of determining the nature of disease by tissue examinations is basically associated with postmortem examinations — a thankless procedure perhaps, in the opinion of some, — and yet with a wealth of personal satisfaction to the close student of disease. The information gained, of course, has no practical benefit to the deceased: at least, it cannot restore life. But the attending physician is served in revealing to him the conditions in the body of his patient which he may have diagnosed correctly, may have suspected, or had no inkling of whatsoever. To the pathologist, in completing these examinations is the opportunity to determine the truth or fallacy of his own conclusions made during life. These multiplied in his experience and in the experience of others afford work standards against which his new tissues for diagnosis are matched.

The place of the hospital laboratory in medical practice, then, is to provide the attending physician with reliable results of so-called laboratory tests, and to the clinical pathologist is delegated the responsibility of executing this function.

I like to think of him as one steeped in the spirit of pure science because he must use so much of the basic subjects in his work; and that in the execution of his duties he develops into a forceful, modest laboratory diagnostitian giving to his professional colleagues the essentials in estabishing a correct diagnosis — the basis of proper treatment.

The Pathologist In The Cancer Clinic: The pathologist occupies an important position in the cancer diagnostic and treatment clinic, because with him rests the responsibility of tissue diagnosis. He must examine the tissues in the lesion and determine their nature. This, of course, directs the course of treatment which the surgeon and radiologist follow. The pathologist has no innate mystic power or endowed gift for his functions, simply because he is engaged in pathology as a special field of training. He must be trained and experienced just as the surgeons, the internists, and others are trained in their specialties. Presumptions on his part are as reprehensible as they are in other fields. The final diagnosis of a tissue embodies information that is derived from both gross and microscopic features. The proportion of each element in a diagnosis varies. In some, the gross appearance is of dominant value, and the microscopic structure is confirmatory; in others, the microscopic examination determines the diagnosis; and not infrequently both gross features and microscopic structure are equally important in the final conclusion. The diagnosis of a lesion, whether it is tumorous or non-tumorous, determines the direction of treatment. Clinicians, in evaluating

the nature of a nodule of the breast, by experience, develop and increase their diagnostic ability, but all admit that they have expressed only a tentative opinion, and that the final diagnosis depends upon a clear direct view of the tissues in the mass and a microscopic examination. This remark has no great import with large extensive carcinomas of the mammary gland which any physician will recognize at once. But medical practice today appreciates the limitations of surgery and radiology in the treatment of advanced cancer, and emphasizes the need of radical destruction or elimination of the growth in its initial or restricted stages. Destruction or removal of the cancerous growth at this stage affords the best hope of cure. In the evaluation of these tissues the pathologist functions.

The diagnostic service and the benefits to the patient are improved when the pathologist participates with the clinician in the physical examination of the patient. The pathologist obtains an understanding of the lesion as it confronts the clinician. This increases his fund of practical information and arouses a personal interest in the disease of the patient. His thinking processes, because he is a pathologist, take channels of thought different from those of the surgeon or other consultants. This proximity of the pathologist to the disease in the paticnt is important. There should be a minimum delay between the diagnosis and the initiation of proper treatment of any malignant growth. Having the facilitics of tissue diagnosis in immediate proximity with the patient accomplishes what is widely recognized as good medical practice. In your mind, contrast the situation where a surgeon exposes a mass in the breast or elsewhere, has a diagnosis within a few minutes, and does all surgical treatment in one continuous procedure, with work conditions where a portion of the mass is excised and days after another operation must be undertaken. The pathologist also serves in the subsequent care of the patient. Nodules, suspected as recurrences or metastases, are submitted to him for examination and, finally, he is called upon to make the postmortem examination.

The Pathologist In The Hospital: The pathologist in the hospital renders an important service. In recent years the demands placed upon the clinical laboratory in hospitals have increased by leaps and bounds. Today the diagnosis and treatment of disease in patients in well-organized hospitals is accomplished and guided by numerous and varied clinical laboratory tests. Blood, urine, stomach, stool, and bacteriological examinations of all kinds, serological tests, and chemical analyses of the blood are made for these patients under the supervision of the pathologist. Often he is consulted in the laboratory to interpret the results of the tests, and not infrequently the diagnosis of the disorder in the patient is made by these examinations. The specific field in which the pathologist alone functions is in pathological anatomy. To him directly are delegated the examination of surgical tissues and the postmortem examinations. In many hospitals all tissues removed surgically are examined routinely. Reports of these examinations are prepared for the clinical records of the patients and for the permanent files of the hospital, and the sections are preserved for reference.

As the pathologist through daily experiences builds into himself tissue diagnostic ability and acumen and his work becomes coordinated with his professional associates, his position among his colleagues becomes that of a friendly counsel. They bring him their difficulties in diagnosis, the clinical histories of patients are reviewed in consultation, the surgeon seeks his opinion during surgical operations, and plans for further studies of patients are discussed. The postmortem examinations which the pathologist makes should be considered as educational: an opportunity for postgraduate instruction for the attending physician and staff. They provide also material for organized and instructive clinical pathological conferences.

The hospital and staff are obliged to support the pathologist. He should have the necessary equipment for the clinical laboratory and the laboratory should not be exploited for commercial gain. With work relations mutually promoted between the pathologist, staff and hospital, the medical practice of such a community rises to higher levels.

CARDIAC REVIEW OF 1940

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In the previous cardiac reviews[1-6] emphasis was placed on the clinical aspects of heart disease. This year, because of the war and the interest in defense preparations, there has been a drastic curtailment in the number of articles on the heart and its disturbances. The cardiac literature of 1940 was heavy on the use of sulfanilamide and its derivatives in all forms and phases of bacterial endocarditis; on hypertension, especially in association with a possible renal factor; and, as of recent years, a vast preponderance of material on all aspects of a very important subject — coronary artery disease.

1. SYMPTOMS AND SIGNS

The clinical interpretation of symptoms and signs of heart disease has been neglected in recent years, which Weiss[7] maintains is attested by the lack of adequate discussion in the literature, including textbooks. Bloomfield[8] stated that dysphagia may occur in connection with the following disorders of the heart and aorta; dilated left auricle, pericarditis, saccular aneurysm, dissecting aneurysm, and anomalous aortic arch.

2. METHODS OF CARDIOVASCULAR EXAMINATION

Electrocardiography.—All electrocardiograms should be made with the subject in the reclining position, according to Ylvisaker and Kirkland,[9] for not only would this eliminate the possibility of making certain diagnostic errors, but the heart rates would be slower and this would tend to diminish the S-T and T-P distortion. Sigler[10] stated that the electrocardiogram does not usually show characteristic changes after exercise that could be taken to indicate the presence of coronary insufficiency. This is also the opinion of Riseman et al,[11] for some subjects without heart disease may show changes similar to those which occur in some patients with angina pectoris, whereas other patients with angina may fail to develop appreciable changes following the same amount of work. Stewart et al[12] stated that in pulmonary infarction certain patterns occur in the form of the four leads of the electrocardiogram which appear to be characteristic of the lesion; the changes appear shortly after the occurrence of infarction and are detected by taking serial tracings, as alterations are transient and may disappear in a few days. The diagnosis of pulmonary embolism, as it appears to Sokolow et al,[13] must rest on an awareness of the possibility, and the suspicion that it may be present when atypical electrocardiographic features which superficially resemble coronary occlusion are noted.

Roentgenography.—The method, described by Robb and Steinberg,[14] of visualizing the chambers of the heart, the pulmonary circulation and the great blood vessels in man consists of two parts: (1) rapid intravenous injection of enough radiopaque material (solution of diotrast, 70%) to make the interior of the heart and of the thoracic blood vessels opaque to the roentgen ray, and (2) rentgenography of these structures at the time of their opacification.

3. ETIOLOGY OF HEART DISEASE

Congenital.—Tinney[15] presented two cases of interauricular septal defect, both in males, and stated that the only way to be sure of a correct diagnosis is by roentgen or fluroscopic examination as there are four characteristic features: increased hilar shadows, great enlargement of the right side of the heart, a small aortic knob, and a very large pulmonary conus. Gitlow and Sommer[16] reported the case of a 45 year old male with complete coarctation of the aorta, together with a bicuspid aortic valve and aortic stenosis of the Moenckeberg type, yet the history indicated that the collateral circulation had been perfectly adequate as actual impairment of the aortic outflow did not occur until after the developement of stenosis of the aortic valve. Benjamin et al[17] cited the case of an 18 year old girl with persistent ostium atrioventricular commune in a heart which functioned as a biloculate organ, with a history that extended over 11 of the 18 years of life. Joger[18] reported the case of a 55 year old woman who was admitted to the hospital following an attack of severe abdominal pain; she expired on the 9th hospital day and an autopsy disclosed embolic occlusion

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Note: This manuscript was originally submitted for publication on January 6, 1941, but was unfortunately misplaced. A duplicate copy was re-submitted on October 25, 1941.

of the superior mesenteric artery; the embolus arose from fragments coming from a recently non-infected thrombus in a patent ductus arteriosus.

Rheumatic.—From a clinical study of 81 young patients who acquired the physical signs of pure mitral stenosis, Walsh and his co-workers[19] showed that: (1) the evolution of the physical signs prior to the establishment of this deformity required in the majority from 5 to 15 years; (2) a relatively mild form of rheumatic fever appears to favor the developement of this particular lesion; and (3) the prolonged course of the disease in most patients with this deformity is fundamentally dependent on a benign type of rheumatic fever. Sosman[20] stated that mitral stenosis can be diagnosed frequently by careful roentgen examination as the demonstration of a calcified mitral valve is unequivocal evidence and dilatation of the left auricle without general cardiac enlargement is highly presumptive evidence. After follow-up periods averaging 7 years, Brown and Wolff[21] found that 50% of a group of 175 patients with acute rheumatic fever showed no evidence of heart disease; there was no constant relation between the severity of the illness or the number of recurrences and the deevlopement of cardiac damage. Boas and Ellenberg[22] gave large doses of salicylates to bring about prompt relief in acute rheumatic pericarditis with effusion; and there results a rapid reduction in the pulse rate and a resorption of the pericardial exudate with quick relief of dyspnea and toxemia. Clawson[23] analyzed 796 cases of rheumatic heart disease and found that, as a rule, patients with acute rheumatic endocarditis die, not during an attack, but later, from the effects of valvular stenosis and insufficiency. Hedley[24] reported that among 324 cases of bacterial endocarditis, 64.5% were regarded as superimposed on rheumatic heart disease.

Bacterial.—According to Major[25] sulfanilamide compounds show, in some instances, a fall of temperature to normal and the disappearance of the organisms in the blood stream of patients with endocarditis lenta. Heyman[26] reported a well established case of subacute bacterial endocarditis, in a 38 year old female, 18 months after recovery due to successful treatment with sulfanilamide; small doses of the drug were given over a period of 6 months. Lippmann[27] reported the recovery of a case of bacterial endocarditis closely following the administration of a total of 585 grains of sulfanilamide orally and 30 cc. of ammonium heptenchlorarsonate, in 1cc. and 2cc. doses of a 1% solution, intravenously. Christie[28] detailed a case of endocarditis in a 17 year old female with chronic foci of infection, chorea, hematuria, petechiae, organic heart murmur, splenomegaly, progressive pallor and weight loss, and two blood cultures positive for *Strep. viridans,* who is apparently cured with sulfanilamide; following large doses (120 grains daily) for 14 days, the patient became afebrile, had 4 negative blood cultures and showed steady improvement and no remission in a year's observation period. Steele[29] stated that sulfanilamide therapy had no effect on the general course of 13 cases of subacute bacterial endocarditis. The Alexanders[30] reported the cure of a case of acute ulcerative endocarditis in a 62 year old male following the moderate dosage of sulfanilamide over a prolonged period of time. Bayles and Lewis[31] found subacute bacterial endocarditis in older people (41 to 72 years) to be associated with pre-existing or chronic heart disease, but the clinical features of the endocarditis are essentially the same as those in younger patients but less accentuated. In a proved case of subacute bacterial endocarditis Kleiber[32] gave sulfapyridine and heparin, and the blood cultures were temporarily rendered sterile; severe hematuria necessitated the cessation of treatment. Fishkin and Pilot[33] reported a case in a 14 year old girl of tricuspid endocarditis due to Type I pneumococcus complicating pneumonia and mediastinal empyema; sulfapyridine temporarily cleared the blood stream of the organisms but did not prevent the fatal outcome. Braunstein and Townsend[34] stated that a bacterial endocarditis superimposed on a syphilitic aortic valvulitis may be suspected when in the presence of an aortic insufficiency, a gradually progressive anemia exists with slight daily intermittent rises in temperature which cannot be expained by other observations. Boyd[35] added that the clinical diagnosis of this association is at best difficult, but it should be suspected in any case of supposed syphilitic aortic insufficiency with a continuous febrile and progressively downhill course. At the Cook County Hospital, according to Rosenberg,[36] during the 10 year period from 1929 to 1938, 228 cases of bacterial endocarditis (31, acute; 197, subacute)

were observed among a total of 11,666 cases in which necropsy was done; of these, in 5 (1, acute; 4, subacute) the disease had developed on syphilitic aortic valves.

Syphilitic.—Kampmeier and Combs[37] studied the records of 163 patients with syphilitic aortic insufficiency in order to determine the part antisyphilitic treatment played in prolonging life, and felt that their study did not indicate that adequate therapy has a favorable influence on the prognosis of this lesion.

Thyroid.—Pemberton and Miller[39] believe that for a complete conception of cardiac physiology in relation to the hyperthyroid states the condition must be thought of in terms of altered, increased metabolism; and that a certain degree of cardiovascular disturbance is almost invariably associated with thyrotoxicosis. They stated that the most common disorder of cardiac rhythm is auricular fibrillation, and its persistence following thyroidectomy is suggestive of the presence of associated primary cardiac disease, residual cardiac injury from protracted hyperthyroidism, or recurrent hyperthydoidism of exopthalmic goiter.

Hypertension.—From the study of 243 cases of arrythmia among 800 hypertensive hearts, Flaxman[40] noted that auricular fibrillation was the most common arrythmia as it occurred in 198 (81.5%) of the patients; it had the best prognosis except in cases in which the fibrillation preceded and precipitated congestive heart failure. Arrythmia may occur at any time during the course of hypertensive heart disease and often is the first indication of cardiac involvement. In their studies on hypertensive heart disease, Davis and Klainer[41] found that patients with essential hypertension have more coronary atherosclerosis than patients without hypertension, a difference particularly striking before the age of 50. They[42] offered evidence to show that, although the incidence of coronary atherosclerosis in patients with essential hypertension is relatively high, hypertension, per se, is not the cause of this high incidence. In a study of 200 cases of hypertensive heart disease Garvin[43] found 14 in which a diastolic murmur was heard at the base of the heart; at autopsy the hearts in these cases were dilated but showed perfectly normal valves, and the pathological findings permitted no other conclusion than that the aortic insufficiency noted in life was functional and not due to anatomical changes in the valve leaflets.

Pulmonary.—In a review of 20 years of personal experience, White[44] stated that pulmonary embolism and infarction are easily overlooked, especially in the presence of congestive heart failure, when they are most common; or they are erroneously diagnosed as something else, especially pneumonia, congestive heart failure, or coronary thrombosis. Clues to the diagnosis lie in the occurrence of unexplained fever, leukocytosis, tachycardia, faintness, prostration, dyspnea, or even jaundice (from hemolysis of the infarct plus an engorged liver) especially in a cardiac patient (and particularly in the presence of mitral stenosis or heart failure).

Coronary.—From extensive clinical and pathological studies Blumgart et al[45] noted that obstruction of the normal coronary arterial flow by arteriosclerotic narrowing or occlusion regularly results in the developement of intercoronary anastomoses; the developement of which is not related to age, and such circulation may so well compensate for occlusion or marked narrowing of a major coronary artery that the blood supply to the heart remains adequate for ordinary activities of life. Shohet et al[46] stated that coronary disease causes a definite and progressive increase in the total heart weight. Horn and Finkelstein[47] studied 100 hearts which at necropsy showed evidence of recent occlusion of the coronary arteries either by thrombosis or by massive hemorrhage into their walls or both; arteriosclerosis was observed in every instance in which a partial or complete arterial occlusion was found, so that from a morphologic analysis, coronary occlusion is an incident in arteriosclerosis. Smith[48] pointed out that the rate of the formation of the coronary obstruction determines in a large measure the extent of the collateral circulation, the histologic changes in the myocardium, the efficiency of the heart, and quite probably the character of the clinical expression. Blumenthal and Reisinger[49] stated that attacks of cardiac pain other than angina of effort may precede the typical manifestations of coronary occlusion. Steincrohn[50] observed that the pain of an attack of coronary thrombosis may be compared with the pain of a number of attacks of angina pectoris which follow one another closely, but the pain and the rest intervals in

coronary thrombosis differ from these only in that the pains are more severe in the former and are unrelated to exertion. In a study of 375 cases of myocardial infarction, Pollard and Harvill[51] found 17 instances (4.5%) of undoubted coronary occlusion in which no pain, substernal pressure, or other "anginal" symptoms had occurred at any time; among the symptoms which occurred at the time of the accident in the 17 cases, the most common were dyspnea, nausea, and vomiting, dizziness, and fainting or collapse. Boland[52] reported that the administration of oxygen in high concentration serves as an efficient method of relieving the intense pain which may accompany acute coronary thrombosis. Strauss[53] cited five cases in which the diagnosis of coronary occlusion was clear clinically from the start, but the electrocardiograms showed changes only after a lag of several days. Master and Dack[54] stated that an attack of acute coronary occlusion is not sufficient reason for permanent disability; but resulting heart failure or a severe anginal syndrome is evidence of complete disability. The development of persistent pain in one or both shoulders is a relatively common sequel to myocardial infarction, according to Ernstene and Kinell,[55] and the severity of the condition ranges from the clinical picture of typical periarthritis with intense pain and great limitation of motion to one of mild aching pain with a sensation of weakness but without loss of function.

Pregnancy.—Among 22,837 patients with full-term and premature deliveries observed during 6½ years, Oppel[56] reported that 620 cases were complicated by organic heart disease, and congestive heart failure occurred in 25 (4%). Sodeman[57] pointed out cardiac abnormalities in patients who had apparently normal hearts before they became pregnant, and divided these cases into three groups: (1) physiologic changes, which are important to recognize in order to prevent unnecessary obstetric procedures and to avoid needless restrictions on the activity of such patients in the last trimester; (2) in the course of hypertensive toxemias of pregnancy and acute hemorrhagic nephritis in the antepartum period, cardiac failure, which may be acute or chronic, left-sided or right-sided, may develop; and (3) cardiac failure may develop from 2 to 4 weeks postpartum in patients who have shown little or no evidence of heart failure antepartum. Jensen et al[58] studied 108 obstetric patients with cardiovascular disease, and related that there were no deaths among the patients with organic heart disease who followed instructions and received adequate care from the beginning of pregnancy. Flaxman[59] analyzed the life cardiac histories of 49 women with organic heart disease who delivered from 1 to 22 children (average 5 pregnancies) as compared with the histories of 41 nulliparous women with similar cardiac lesions, which revealed that there was little or no difference in the known duration of the heart condition, in the ages at the onset of myocardial failure, or in the ages at death; the heart lesions were recognized earlier in the parous women, mainly because of the pregnancies; and women with heart disease die early because of the natural evolution of the cardiac disturbances and not because of the childbearing.

Trauma.—In a full discussion of direct nonpenetrating injuries of the heart, Leinoff[60] stated that the diagnosis of traumatic heart damage depends upon: (a) the awareness of this clinical possibility, (b) history of a direct nonpenetrating injury to the chest, (c) a previous normal cardiovascular history, and (d) the appearance of signs and symptoms, or laboratory findings indicating heart damage and appearing in the great majority of cases immediately after the injury and persisting thereafter.

4. PATHOLOGY

Myocardial.—Strong and Munroe[61] collected 42 hearts weighing 750 grams or more from the autopsy material of two years and noted that hypertension was the important clinical factor in producing cardiac hypertrophy; chronic adhesive pericarditis was notable because of its infrequency. Brown and Evans[62] reported a case of cardiac rupture, in a 70 year old male, through a calcified myocardial infarct with the intermediate formation of a myocardial aneurysm; a bacteremia resulting from a perinephric abscess, with localization of the inflammatory process in the myocardial aneurysm, brought about this unusual event.

Endocardial and Valvular.—Contratto[63] stated that a person may have aortic stenosis for many years without cardiac symptoms, but when congestive failure does ensue, the duration of life is short. Cohen and co-workers[64] reported 9 cases of calcareous aortic stenosis and that the outstanding physical signs are the typical murmur, accompanied by a diminished second aortic sound and a palpable thrill in the aortic area; the stenotic aortic lesion is usually accompanied by atheromatous changes in the aorta and coronary arteries and at times calcific changes in the mitral valve and ring; the occurrence of sudden death is striking. From a comparative study of valvular calcifications in rheumatic and nonrheumatic heart disease Epstein[65] found that the presence of calcifications did not appreciably alter the prognosis, nor was there any relationship between the symptoms of heart failure of known cardiac disease and the presence of calcareous deposits.

Pericardial.—Heimann and Binder[66] reported that pericardial aspiration and pneumopericardium improve the prognosis in tuberculous pericarditis as far as the time of survival is concerned. Glenn[67] cited a case of constrictive pericaritis in a 46 year old male which resulted from a crushing injury to the chest 2 years before the onset of the fatal illness. Harrington and Barnes[68] reported that 3 cured patients presented the typical picture of Pick's disease and all had extensive calcification of the pericardium with constriction of the heart muscle; the results, after adequate removal of the constricting pericardium, exemplify the capability of the heart and liver to reestablish function if the damage has not been too great.

Vascular.—Holland and Bayley[69] reported 19 cases of dissecting aortic aneurysm and noted that the most characteristic feature is the sudden onset of severe thoracic or abdominal pain, which may remain confined to the trunk or may radiate to the lower extremities; a rapid extension of pain from the thorax to the abdomen, and thence to the thigh, is probably to be explained by rapid dissection of the media in these regions. For this reason, a severe attack of thoracic pain, followed almost immediately by a severe attack of abdominal pain, is a sequence highly suggestive of this lesion. The 3 cases reported by Weiss et al[70] are unusual, not only because the dissecting aneurysm was completely healed, but also because atherosclerosis was present in the new channel in the wall of the dissecting aneurysm; and in none of the cases did the existence of the double channeled aorta contribute to the death of the patient. In approximately 10% of the reported cases the aneurysm heals, is not the cause of death, and can be compatible with adequate functional capacity for years.

5. FUNCTIONAL DISORDERS

Congestive Failure; Use of Digitalis and Diuretics. Stewart and co-workers[71] stated that there is a marked decrease in the functional capacity of the heart as a pump in congestive failure as shown by the decrease in cardiac output per minute per square meter of body surface (cardiac index) and per beat; prolongation of the circulation time occurs, as also may a rise in venous pressure, and the size of the heart increases. Since the output per beat is decreased, and the heart size is larger, the work per beat is no longer commensurate with the size of the heart; but with restoration of compensation the functional capacity is increased toward a normal level but on the average does not attain the level of which it was capable before the onset of failure. Although congestive failure alone may possibly explain up to one degree of fever, Kinsey and White[72] found that there was almost invariably some underlying complication to account in general for fever in cases of congestive heart failure, and in the order of frequency the four most common complications were pulmonary infarction, pulmonary infection (especially bronchopneumonia), active rheumatic fever, and acute coronary thrombosis. In the management of patients with heart failure Levine[73] stated that when the cardiac rhythm is regular the fact that the rate is rapid is no proof that the heart can stand more digitalis; in some cases whether more or less digitalis is needed can be ascertained only through trial and error, for the main point is whether the clinical condition improves with one type of regimen or another. Batterman et al[74] presented a method of obtaining rapid digitalization by the simultaneous administration of ouabain intravenously and digitalis leaf orally which has the following ad-

vantages: (1) the use of ouabain brings about rapid improvement; (2) the simultaneous administration of the more slowly absorbed digitalis leaf not only maintains the improvement, but also decreases or abolishes the gap between the beginning of digitalization and the establishment of a maintenance dose; (3) although more rapid than the usual method of digitalization, this method is a safe one, and is no more likely to produce toxicity; and (4) the method is applicable to patients with normal sinus rhythm as well as those with auricular fibrillation. Gold and Cattell[75] indicated that digitalis improves the function of the heart in cardiac failure by direct action on the heart muscle. Wood[76] stated that a fall in pulse rate is usually associated with improvement from digitalis therapy but is not essential. Meyer[77] suggested that it is not the change in the performance but rather in the condition of the heart under the influence of digitalis which is decisive for improvement. Provided it is given in proper dose and according to proper indications, Jucker[78] considers strophantus to be indicated in the treatment of acute insufficiency of the heart. Stroud and Twaddle[79] stated that coramine may have a beneficial action on the abnormal respirations associated with cardiac disease. Gross[80] suggested that the beneficial effects of diuresis in congestive heart failure may in part be due to reduction of excessive myocardial water content, thereby improving cardiac contractility. Volini and Levitt,[81] in their studies on mercurial diuresis, found that the fall in spinal fluid pressure which follows such diuresis is much greater, on the average, than that produced by spinal drainage, and is not accompanied by the possibility of danger. Horine[82] stated that the mercurial diuretics are of pronounced value in controlling dyspnea due to heart disease in the absence of manifest congestive heart failure, and even in the absence of moist rales at the lung bases. Brightman and Batterman[83] emphasized that, if the diuresis is not satisfactory after the rectal administration of a mercurial suppository, the intravenous or intramuscular route should be resorted to only after an appreciable time interval has elapsed to allow the body to care adequately for the previously absorbed mercury.

Angina Pectoris.—Scarlett[84] studied 100 cases of angina pectoris from which he pointed out that the care which the patient takes of his health after the condition becomes established is an important determining factor in the prognosis. In a review of 4,000 patient records Fitz-Hugh[85] noted an incidence of migraine in 22%; 27% of these migraine patients presented a syndrome of recurring precordial pain which seems to be a migraine equivalent; proper recognition of the syndrome of "precordial migraine" and its interpretation to the patient (as a sort of a harmless "headache around the heart") are useful steps in the management of these cases. Spillane and White[86] described cases of angina pectoris in which bouts of pain in one or both arms were, for varying periods of time, the only manifestations of ill health; such pains, constricting in character, appear suddenly on exertion, are felt usually at the wrists, forearms or elbows, and are relieved by rest or by nitroglycerine. Davis and Klainer[87] concluded that cardiac hypertrophy and increased cardiac work are factors other than coronary insufficiency, which are important in the production of angina pectoris in hypertensive heart disease. Among the patients studied by Hunt and co-workers[88] the emotional make-up appeared to be of little significance as a predisposing factor in the production of the anginal syndrome. Blackford[89] stated that of the various theories which have been advanced to explain angina pectoris in cases of mitral stenosis, that of the failing heart muscle is the simplest. Raab[90] theorized that attacks of stenocardiac pain on effort, emotion, cold, etc., are caused by anoxia of the heart muscle; that is, largely due to acute discharges of adrenalin from the suprarenal glands occurring physiologically under the conditions mentioned, and adrenalin exerts a specific anoxiating effect upon the heart muscle which is under normal circumstances compensated by simultaneous dilatation of the coronary arteries; and this compensatory mechanism must fail when the coronary arteries are unable to dilate adequately due to coronary sclerosis and thus an abnormally painful degree of myocardial asphyxia results.

Paroxysmal Tachycardia, etc.—Horine[91] used quinine dihydrochloride (grs. X in a 20 cc. solution) intravenously in 9 cases, paroxysmal in form, of auricular tachycardia, flutter or fibrillation, and immediate restoration of normal sinus rhythm resulted in 8 instances. Strong and Munroe[92] reported the case of a 41 year old male with an attack of paroxysmal ventricular

tachycardia that lasted 23 days without intermission; many therapeutic agents were tried, but the only one of value was quinidine, which was effective only when given intravenously in the large amount of 40 grains, Veran and associates[93] reported the case of a 43 year old male, in whom the shock of bad news suddenly induced an attack of tachycardia and who rapidly grew worse; various therapeutic measures, including intravenous injections of quinidine, failed, and finally procaine hydrochloride (10 cc. in a 1:200 concentration) was injected into the left stellate ganglion 32 days after the onset, and within 23 hours cardiac action became normal and all symptoms of cardiac failure gradually disappeared. Berry[94] cited the case of a 16 month infant who recovered from an attack of paroxysmal tachycardia with a rate of 336-340 a minute. Fine and Miller[95] reported a bizarre case in a 16 year old girl in whom paroxysmal auricular tachycardia invariably occurred in the sitting or standing positions, unless held in abeyance by digitalis or quindine therapy.

Auricular Fibrillation.—Weinstein and associates[96] found that digitalis, when used in therapeutic doses, lessened the ventricular acceleration which occurs following a standardized exercise test in ambulatory patients with auricular fibrillation, and decreased the pulse deficit at the same time, but it was not effective in patients who already had a slow ventricular rate. The Bishops[97] reported a case of auricular fibrillation observed for 25 years; this woman, first seen in 1914 at the age of 55, complained of palpitation and dyspnea on exertion; her pulse was 130, blood pressure 130/105, and a polygram showed auricular fibrillation; in 1931 mild congestive failure appeared, became moderate in 1932, and in 1934 became marked, and she died at the age of 80; autopsy revealed chronic rheumatic heart disease with mitral stenosis, calcification of the left auricular wall, left coronary artery stenosis due to atherosclerosis, concentric hypertrophy of the heart, and evidence of congestion and effusions of fluid. Evans[98] determined the relative value of certain digitalis preparations in heart failure with auricular fibrillation and of nine different substances he always induced effective digitalization and maintained it by powedered digitalis leaf, digifoline, digoxin, and Tr. digitalis, mentioned in the order of their therapeutic activity in customary doses and from a practical standpoint.

Heart-Block.—Van Der Kloot[99] described a case of heterogenous congenital bundle branch block, associated with what is probably an interventricular septal defect, in a 26 year old woman; at the present time this defect causes no symptoms, and is compatible with an active, useful existence. The prenatal diagnosis of complete congenital heart block is reported by Geiger and Hines;[100] a sudden slowing of the fetal heart rate which occurred between 17 and 19 hours before birth pointed to the onset of the abnormal mechanism at a specific time, and the sudden onset demanded a differential diagnosis between heart-block and intra-uterine asphyxia; the child is alive and healthy at five months of age, with the heart block still present.

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THE ETIOLOGY OF STAMMERING: — Fundamentally a Wrong Psychophysiologic Habit in the Control of the Vocal Cords for the Production of an Individual Speech Sound; A Beginning Presentation.

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I. THE NORMAL ACTIVITIES OF THE VOCAL CORDS

In order to appreciate the action of the so-called vocal cords in the production of elemental speech sounds, we must bear in mind the following facts about them:- First, acting in connection with the musculature of the chest wall, the vocal cords are primarily and normally concerned with the production of two basal involuntary and voluntary animal functions, namely abduction and adduction. Since the action of abduction opens the vocal cords, it constitutes their manner of activity for breathing; and, since the act of adduction of the vocal cords causes their complete closure, it constitutes the activity which prevents breathing. The voluntary animal uses of the acts of adduction and of abduction of the vocal cords are important to life, and will be discussed in more detail in a later essay. Suffice it for present purposes to say that the larynx, through vocal cord action, serves (especially through the act of coughing), to protect the breathing organs from danger from the presence of foreign bodies. In this life saving function the act of adduction, employed either involuntarily or voluntarily, plays a fundamental part. Both abduction and adduction of the vocal cords are employed either in coordination or independently, not only involuntarily for certain definite purposes, but also voluntarily.

But it is to be noted that the individual, especially in this connection the child, has no knowledge of the existence of the vocal cords.

*Fourth of a series of essays presenting a new conception of the etiology of stammering. The three preceding were: —

1. Peripheral Physical Inhibition of Speech; an Essential Phenomenon and an Important Causal Factor of Stammering. The Archives of Otolaryngology, December 1930, Volume 12, pp. 769-784.

2. A Critical Examination of the Foundations of the "Recoil of the Vowel" Theory of the Cause of the Impediment of the Speech in Stammering. The Journal of Speech Disorders, June 1940, Volume 5, No. 2.

3. The Etiology of Stammering; An Examination into Recent Studies; with a Glance into the Future. The Illinois Medical Journal, Volume 79, No. 4, April 1941, pp. 334-341. The above essay appears also in The Journal of Speech Disorders of March, 1941.

Nevertheless, these organs of course are employed to accomplish both vital animal functions and eventually voice production. This lack of a knowledge of the existence and activities of the vocal cords, which, by preventing subjective knowledge of the significance of vocal cord adduction, serves as we shall see, to encourage their abnormal action in stammering.

It is also to be noted, that, through their accomplishment primarily of vital animal functions, the child's employment of voluntary abduction, as well as of adduction, definitely precedes their use in voice production. Abduction and adduction, as indicated by their involuntary as well as voluntary neurological mechanisms of control, are true animal functions, while in voice production they are employed only voluntarily, and for the especial purpose of producing sound. In the production of voice the two primary functions of abduction and adduction are simultaneously and voluntarily set into controlled opposed action so that the two vocal cords shall be held stationery and near to each other, in order to permit of being vibrated by the pressure of the breathed air.

Speech is based, first, on the psychologic creation of thought in terms of elemental speech sounds; second, on the voluntary detailed cerebral direction of the breathing function for the production of each elemental speech sound, and, third, on the repetitive order of production of the individual speech sounds, for the building of words and their combination into sentences. Excepting for the various oral articulative placements required, each vocal act, or each combination of such acts, which have for their purpose the production of a speech sound, consist (perhaps more or less modified) of some factor or factors concerned with the production of the breathing function. Speech is voluntary breathing adapted to the successive production of the individual sounds of speech by the breathing mechanism.

Thus by a series of cooperating acts the entire vocal (or breathing) mechanism is concerned at one time with the production of a single elemental speech sound. The first and primary act of each of such series of acts (on which the production of each elemental speech sound depends) concerns, first, the placement of the vocal cords for production of the sound in mind, and, second, their vibration by air pressure chiefly from, but also to, the lungs, created by the action of the chest musculature in producing the impact of the breathed air against and between the vocal cords already approximated for the production of a speech sound. Thus the vibratory foundation of each elemental speech sound is produced. These basal laryngeal vibrations are modified by secondary, associated and related articulative and palatal acts.

The sounds of the environmental speech are constantly in the mind of the child, encouraging him to attempt their production, through setting into balanced opposed action the two primary animal functions of the vocal cords, abduction and adduction. As he gradually develops the capability of controlling the entire vocal machine for the production of each elemental speech sound, a psychophysiologic habit for the creation of each sound is gradually developed. This habit also comes to involve frequently employed conbinations of sounds, and also words.

II. BUILDING THE PSYCHOPHYSIOLOGIC HABIT OF STAMMERING

Each animal function of the vocal cords, abduction and adduction, is voluntarily controllable. Whether (1) abduction alone, or (2) adduction alone, or (3) both together, for voice production, shall occur, depends on the voluntary visualization of a mental purpose. If (1) the mental imagery of breathing is voluntarily developed, abduction of the vocal cords occurs, resulting in an open laryngeal passage for air, if (2) the mental imagery of the complete arrest of the passage of air is conceived, the result is vocal cord adduction with complete closure of the vocal cords, and the consequent prevention of breathing and of voice production; (3) if the mental imagery of the production of a speech sound is voluntarily visualized a definite approximation of the vocal cords for that sound, due to simultaneous control over abduction and adduction, results.

Insofar as the child's mind is definitely focused on the production of a speech sound danger of mistaken effort at voice production has no existence, and a more or less correct speech sound must result. But as the development of speech

continues a danger may arise, due to the possibility of the accidental visualization by the child of the mental imagery that leads to the arrest of breathing, by which adduction of the vocal cords is produced and the production of breathing and of sound prevented. That this adduction of the vocal cords, the vocal mechanism being in action, constitutes the actual act of stammering is clearly demonstrable by intelligent observation of a large percentage of stammerers.

Indeed the key to an understanding of the act of stammering lies in the well known phenomenon of "blocking". In this typical, basal act of stammering, the musculature of the speech machine being in action in all of its parts, movement of each division of the mechanism of voice production, as well as the passage of breath, cease, while sound production is, therefore, necessarily absent. I shall be able in another essay to prove unequivocally that this phenomenon is possible only when the vocal cords are held by muscular action in a position of complete adduction.

In the development of the act of stammering, instead of focusing the mind on voice production the child becomes confused and accidentally employs not the mental imagery of voice production, but employs that for prevention of breathing, in other words, vocal cord adduction (closure). The child's mind may either quietly and unexcitedly, or excitedly and confusedly, slip into this natural psychophysiologic animal "trap". It requires a voluntary act, with which the child is more or less familiar. Even when the purpose of speech is not in the child's mind, he can accidently, or experimentally, slip voluntarily into the production of vocal cord adduction. Once he has accidently experienced the sensations of vocal cord adduction, instead of those of voice production, his childish interest may become aroused, causing him to deliberately repeat the act. On the other hand emotional excitement may serve as the basis for the disordered visualization that leads to vocal cord adduction. I remember a three year old white girl, who was set into violent emotional excitement by being frightened by a quite innocent act of a colored man. Excitement, weeping, screaming, and stammering began at once and the speech disorder continued into adult years. Such is one typical manner of inciting complete vocal cord closure during speech.

The onset of this interpolation of a misplaced psychophysiologic animal activity for that of voice production, which constitutes a single act of stammering, occurs almost entirely in childhood, when the normal production of voice for each speech sound is still more or less lacking as to fixity of habit action; the less the firmness of the establishment of habit for the normal laryngeal production of speech sounds, as in the earliest childhood years of speech, the greater is the tendency for stammering to take root. Until the normal habit of speech sound production has become completely established the child must direct the mind, at any rate to some degree, on the production of certain sounds or their combinations. This requirement affords the opportunity for the creation of mental confusion that may lead to the visualization of vocal cord adduction instead of that of voice production. Also circumstances of social speech situations, by creating emotion, or only mental confusion, may have the same effect.

More or less continuity, by repetition, is necessary to the development of the habit of approaching speech in this disastrous manner, if stammering is to result. For a child to start on this wrong activity but after a time to voluntarily relinquish it, is not very uncommon.

The complexities of the psychophysiologic activities of the chest-laryngeal muscular mechanism, including the subjective absence of knowledge of the vocal cords and their action, serve to create this unavoidable danger to the child in acquiring the capability of producing voice. "The trap of stammering" is created by these psychophysiologic complexities in acquiring voice, and must for all time serve to create a certain degree of danger to the child of becoming a stammerer.

III. TWO HABITS OF VOCAL CORD ACTION

This psychophysiologic abnormality of action of the chest-laryngeal muscular mechanism of voice production, which, after it is entered on, we call stammering, or stuttering, once well started shows exactly the same tendency to habit formation as that for normally produced speech sounds. In the stammering child, then, we

POSITION OF THE VOCAL CORDS



I.
Vocal cords abducted for breathing.



II.
Vocal cords in a balanced abducted - adducted position for production of the whispered voice.



III.
Vocal cords in a balanced abducted - adducted position for production of the loud type of voice.



IV.
Vocal cords in a state of complete adduction for prevention of breathing, — their position in the act of "blocking."

Passage from position I to position IV constitutes the act of adduction.

Passage from Position IV to position I constitutes the act of abduction.

eventually find two psychophysiologic habits developing simultaneously, each concerned with the movement of the vocal cords in relation to the intended voluntary production of a single speech sound; one of these developing habits is normal and competent for the production of that sound, while the other directs the organ of voice production — the vocal cords — not for the production of sound, but for the prevention of breathing and consequently also the prevention of voice production. Thus the developing child who stammers is handicapped by his growing tendency to employ the wrong chest-laryngeal habit, rather than the correct one, which, instead of producing voice, prevents its production, and so creates at the time of stammering the impossibility of continuity of speech.

IV. THE EVOLUTION OF STAMMERING

This unfortunate development of two habit actions concerned with the intended production of each elemental speech sound, one normal, and the other serving abnormally to prevent voice production, is subjectively not of very great importance to the stammering child, until developing intelligence serves to point out how serious his disordered speech is conceived by the people, young and old, in his environment. The sensitiveness of the mentally developing young stammerer to the smiles of people in his environment, to their mockings, and to other manners of more subtle criticism of his disturbed speech, leads directly to self-consciousness in talking. The young stammerer's sensitive self-consciousness with respect to his strangely disordered speech, very gradually becomes more pronounced, until at about ages fourteen and fifteen, when he comes to realize the seriousness of his social situation. Then the disorder begins to play havoc with the stammerer's social life, for psychologic complications necessarily are developed.

Emotion, timidity, self-consciousness, inferiority feelings and dread of attempting speech, are natural developments of his self-realization of the seriousness of his speech disorder. During speech he finds it, under such circumstances, well nigh impossible not to focus his mind on the act of stammering, instead of on that of normal voice production, which is theoretically possible. Here, again, the absence of a knowledge of the existence and activities of the vocal cords serves to prevent the stammerer from knowing what he does when he stammers and so to conceive

of protecting himself from its occurrence. Embarrassment is often constant. He knows not why he stammers or whether at any particular moment his speech will be normal or abnormal.

V. PSYCHOPHYSIOLOGIC CONFLICT

All this psychologic social disturbance and confusion eventually leads to another definite step in the evolutionary development of stammering. A definite, but subjectively confused, psychophysiologic conflict arises, and continues so long as stammering exists. All stammerers are able at times to talk normally, and at all times it is his constant aim so to talk; but his disturbed state of mind, meaning his emotion, his impaired self-confidence, and especially his ever present fear of impaired speech, directs his mind to visualize the production of the act of stammering, and then stammer he must. The psychophysiologic conflict, then, concerns on the one hand the attempt to hold the mind to normal speech production, and, on the other, the undesired slipping of the mind into the visualization of the mental imagery of stammering. The typical stammering of the mature stammerer results from this psychophysiologic conflict. He starts to stammer, but resists by his determination to talk normally if he can, thus a seesaw psychophysiologic struggle between an attempted normal act of speech, and stammering results. Various typical behavioristic attitudes of the stammerer may also be traced to this conflict.

Largely due to the critical attitude of the public toward him the stammerer learns to appreciate himself as a socially marked and discredited individual. He constantly faces one of the most distressing situations of any human being.

The primary explanation of stammering consists, then, not, as has been recently conceived by psychologists and psychiatrists, as some manner of general psychologic disturbance, of the individual child, but in a lurking, hidden, psychophysiologic danger involved in acquiring the control of the vocal mechanism for the production of speech sounds. It is like the loose board in the sidewalk, by which the leg may be broken.

The habit of stammering becomes deeper fixed, and usually more and more complicated, by emotion, lack of self-confidence, and fear of stammering; yet, as maturity of years and of experience produce the inevitable quieting influence on the emotions, the last years of the stammerer's life are apt to be attended with more and more success in gaining self control, and in adhering to normal speech.

VI. PROOF BY TREATMENT

With the most intelligent effort of which I am capable, I have spent many months in devising a new method of treatment, based on the conception that each act of stammering, as herein stated, represents a wrongly placed psychophysiologic habit action, which prevents the production of voice. For more than seven years I have treated stammering by this new method. The results confirm in a remarkable way the truth of the new conception of etiology.

During the ages from eight to twelve years inclusive, complete and permanent recovery has been attained in all cases so far treated. Ages eight to twelve years represent a period in the stammerer's life when, (1) sufficient intelligence on the part of the young stammerer has been attained for the employment of the required treatment, and (2) the psychophysiologic complication of emotional self-consciousness as to speech and of dread of talking, has not as yet become too seriously developed. At these early ages one is able to help the stammerer effectually to hold his mind on controlled normal talking, until the abnormal habit act of stammering has apparently actually been forgotten, or, at any rate, until normal speech has become completely dominant.

Moreover, after ages thirteen, or fourteen, the conditions and results of treatment by the new method have entirely changed. The stammerer is now mature enough to perceive that his stammering incites ridicule and criticism on the part of others. Consequently he develops serious self-consciousness as to his own talking. He is now unable to keep his mind for long away from the visualization of his habit of stammering. Therefore, one cannot teach him to talk invariably with his mind on normal, controlled speech, as can be done at ages from eight to twelve. There-

fore the acts of stammering continue with more, or less, frequency, and the habit of stammering continues. Nevertheless, I do not wish to imply the impossibility of recovery during these later years, but admit only its great difficulty at the present stage of our understanding. Employing more complicated conceptions of treatment than those employed at ages eight to twelve years, and with great persistence, especially at ages beyond but near to fourteen years, complete recovery has occasionally been secured.

The attainment of marked reduction in the frequency and severity of stammering, as well as marked improvement in self confidence is almost always possible. Very much of course depends on the intelligence and cooperative persistence of the stammerer.

Considering the manner of treatment employed and the regularity with which complete recovery occurs at ages eight to twelve years, the reaction of the young stammerer to this form of treatment seems to me to already serve almost as final proof of the correctness of the conception of etiology herein presented.

It is also to be noted, first, that the presentation of new conceptions as to etiology of stammering have been attended in the past only with failures as to success of treatment under their guidance; and, second, that the attainment of regularity of complete recovery in the treatment of stammering has never heretofore been even distantly approached at any age. And it is also to be noted that if complete recovery from stammering on a large scale can be secured during "the favorable age treatment period" — ages eight to twelve years — as now seems practically certain, a very large percentage, if not all, of stammering, may be caused to disappear after age thirteen and, fortunately, before the stammerer has suffered serious psychologic harm.

VII. Summary and Conclusions

I. The employment by the child of the chest-laryngeal mechanism of vocal cord action for purposes of speech sound production is involved in the fundamental activities of the same mechanism for animal purposes. Abduction and adduction of the vocal cords, which constitute their primary activities for animal purposes, are secondarily employed by the child for sound production. During the process of acquiring the ability to control the normal placement of the vocal cords for the production of speech sounds, certain children in attempting their production, either through sheer accident, or through emotional excitement, mistakenly visualize the mental imagery of vocal cord adduction instead of that voice production, thus producing complete vocal cord closure and preventing, instead of producing voice. If this mistaken act is repeated sufficiently a habit of substituting the adduction of the vocal cords for that of the production of speech sounds results.

II. Thus, the stammering child develops two habits of action of the vocal cords, when it is intended to produce a speech sound, one normal for voice production, and the other that of vocal cord adduction, which prevents the production of voice. The latter constitutes the foundation of all acts of stammering.

III. As the stammering child develops sufficient intelligence to observe and interpret the critical attitude of his fellows, young and old, towards his disordered speech, he begins, at about thirteen or fourteen years of age. to appreciate its seriousness. He then comes to be much disturbed about his stammering, and develops psychologic complications: — sensitiveness and self-consciousness as to his stammering, emotion, impaired social self-confidence, and dread and fear of talking.

IV. This speech situation, causing the stammerer to be seriously disturbed in social contacts, leads inevitably to a psychophysiologic conflict during speech. The stammerer desires and aims at normal speech, but his disturbed state of mind, especially emotion and fear of stammering, superinduces the visualization of the mental imagery on which vocal cord adduction depends, and he is compelled to stammer. The effort to talk normally thus is more or less constantly offset by the insistence of the habit of stammering, thus compelling disordered speech.

V. This psychophysiologic conflict, coupled with the disturbed state of mind of the stammerer, serves to explain the struggle character of the stammerer's speech, as well as its various other abnormalities, and also his typical behavioristic peculiarities.

VI. By a new method of treatment aimed to enable the stammerer to hold his mind on controlled normal production of speech, stammering, at ages eight to twelve years, can now be regularly and permanently overcome. This constitutes important evidence as to the correctness of the above conception of etiology.

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DOCTOR'S LADIES — MEDICINE'S CLOSEST ALLY

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It has become commonplace to point out that this is a critical period for the medical profession. Not only are physicians subject to all the pressures and upsets necessarily characteristic of the entire economic life of a nation at war: they remain the target of criticism of numerous groups outside the profession which have sought for years to establish as fact the fable that medicine has failed adequately to distribute the benefits of its scientific achievements, and which have sought to impose on the profession from without some measure of influence or control which would inevitably take from the physician the privilege of determining for whom and under what conditions and with what return he can practice his art.

In these circumstances, it would seem to be unbelievable that any group of physicians should have failed to encourage and support the efforts of a powerful group, sympathetic in its understanding of the practice of medicine as we have known it for the past generation, sincere in its interest in preserving the *status quo*, and remarkably well situated and equipped to publicize the methods and aims of the profession to the public through the normal, established channels of community life throughout the country. Yet, such failures are a matter of record in our own State. Worse still, it is recorded that in a few instances, county medical societies have not only failed to encourage the efforts of their woman's auxiliaries — for these are the powerful, sympathetic groups referred to — but have actually opposed or obstructed the very formation of auxiliaries which seek to advance medical interests. It is a sad fact that not many years ago the president of the Illinois State Medical Society was compelled to report that an effort to organize woman's auxiliaries to the county societies was turned down when presented to several of the county societies, and that "little interest in the organization was displayed."

Specific evidence of the same lack of interest is present in abundance, even after woman's auxiliaries all over the State were operating actively and enthusiastically and with splendid records of worthwhile achievement! A letter dated in December 1941 from the secretary of a county society in response to an appeal for assistance from the State Auxiliary Organization Chairman includes the following statements: "There is not a strong desire on the part of our members to establish such an auxiliary in ——— County. The members of the society do not feel that they wish to approve the organization of an auxiliary in ———— County at this time." A State Auxiliary official seeking approval of the formation of an auxiliary in another locality writes: "We have been baffled by the attitude of the medical society in ———— County. The cause of this indifference or even hostility, is difficult to understand." Still another medical county society officer stated recently that he had presented the auxiliary question before the membership of his group and it was "turned down flat." In explanation, he volunteered that there were a few in the society who "had an aversion to all organizations which have a woman's auxiliary and the medical society was no exception to the rule." "Not interested," "unfavorable," "no advantage," "indifferent," "Opposed," — these are the phrases which occur time after time in the correspondence and conversations of those who have been making an effort to extend to every county society an opportunity to participate in and enjoy the benefits of the constructive programs now in operation in so many counties.

Why?

On analysis, the indifference or opposition to the formation of women's groups may be reduced to three essential factors; each of these is understandable, and, fortunately, each is subject to elimination or correction by appropriate presentation of the facts — except perhaps in extreme cases where a prejudice has developed which may not be overcome by the most eloquent

persuasion or the most unassailable logic. These three factors may be classified as (1) the inertia which is permitted by a failure to recognize the importance to medicine of any program of public or lay education, (2) the fear that a woman's organization, instead of becoming an agency of constructive lay education, might become merely a "gossip club" and actually encourage the exchange or spread of harmful information, and (3) the identity of women's auxiliaries among the many lay groups which are "meddling" with the practice of medicine — the very groups whose influence the medical auxiliaries are helping to overcome and destroy!

Perhaps, after all, there is little hope of awakening those few who at this late date remain unconvinced of the necessity for any program of lay education. Any physician who can doubt for a moment the desirability of widely disseminating accurate and soundly prepared information on, say, popular medical fallacies, or the necessity for periodic medical examinations, or the dangers inherent in the socialization of medicine, or maternal and infant welfare, venereal diseases, heart diseases or tuberculosis must indeed have forgotten the first dictum of the principles of medical ethics which he learned in the classroom: that a profession has for its prime object the service it can render to humanity!

Actually, of course, the physician doesn't exist today who objects to the wholesome public exposition of medical information, and this not alone for his interest in humanity but for his interest in his profession and himself as well — since a public not instructed to recognize and respect disease could rot and die in ignorance without seeking the physician's services. Those who are unresponsive today to the need for public education have for the most part become confused by the emphasis in recent years on the economic problems of the profession and as a result think immediately in terms of attack and defense, of controversy, when the idea of public education or public relations is introduced in connection with medicine. An individual physician or a local society may or may not feel that some discussion of the economic problem is appropriately a part of any program of lay education; the feeling about this one subject should hardly be permitted to prejudice the benefits to the community and the profession which may be expected through programs arranged by woman's auxiliaries consisting of lectures and radio talks by medical men and informal presentations of medical subjects about which no controversy whatsoever has existed for scores of years.

The fear that a woman's auxiliary may become an agency for the encouragement of harmful gossip — and this has been the stated objection to the formation of a woman's group in at least one instance — disposes of itself on a moment's examination. There are, unquestionably a few doctors who are afflicted with irresponsible wives. That the unfortunate results of the predilection for gossip of a few women could be eliminated or even appreciably diminished by the discouragement of organized activity for the medical wives of an entire community seems absurd in the extreme! As a matter of fact, the opportunity provided in a woman's auxiliary for contact with the thoughtful, intelligent women who are invariably its leaders may be expected to accomplish more to reform the erring member than all the lectures and rebukes administered by an irate or embarrassed husband!

The activity in recent years of medical plans, schemes and promotions has been widespread and so feverish that it is not hard to sympathize with the medical man who reacts unfavorably at once to the formation of another lay group on the periphery of his scientific sphere of activity. "Leave medicine to the physician!" is his cry, and the physician is impossible to find who will fail to answer with a heartfelt "Amen!" Less understandable, however, is the reasoning through which physicians' wives are identified with these meddlesome outsiders. That the woman's auxiliary of the medical society must rank first among all community organizations in the friendliness of its interest is obvious. That it will look to the medical society itself for guidance in the arrangement of its programs and the inclusion of only those features which the local society's advisory committee approves is as sure as that the constituents of the one group will continue to look to the other's for their individual support, welfare and happiness! Their interests are coincidental; it is inconceivable that the conflict which may be imagined as possible of occurrence between the medical society and any other group in the community could in fact occur in the case of the woman's auxiliary. Ac-

tually, of course, we as physicians respond warmly to effort on the part of any lay organization to comment favorably or reflect credit on our professional activity. Let the Rotary, Kiwanis, Chamber of Commerce, Woman's Club or Church Society of our community include in its program a discussion featuring useful medical information or otherwise related creditably to our profession and our own meeting next following is sure to produce a spontaneous resolution of gratification, warm and genuine in its recognition of a friendly gesture on the part of the sponsor. That we should be less enthusiastic in our response to the efforts of our own *best friends,* our wives, to create and support an organization whose sole objective is to extend our usefulness seems unthinkable!

The pattern of constructive work for woman's auxiliaries is well established in our State today, and in every other state in the union; officers and committee of the State Auxiliary are eager to extend a helping hand in promoting and organizing auxiliaries to every county medical society in the State to the end that the composite statewide effort shall rebound to the benefit of organized medicine. It would be impossible today for the interest of a newly formed auxiliary to wane through lack of proper purpose or well planned effort to achieve that goal. A partial list of the active committees of a typical auxiliary should suffice to illustrate the point. The Hygeia Committee functions to increase the circulation of the non-profit, informative monthly magazine edited by physicians of our own national organization to improve the public understanding of medical subjects; the Legislative Committee — working under the guidance of the parallel committee of the county medical society — seeks to organize the women voters of the community and focus the influence of women on public officials in municipal, county, state and federal office to the end that legislation favorable to medicine shall have proper consideration and subversive or harmful legislation shall be opposed; the Philanthropic Committee gains support for the established benevolent fund aiding infirm and indigent physicians and their families and thus relieving the community of the burden of their care; the Public Relations Committee arranges for health talks and medical programs at school, church, social and civic meetings; the Program Committee is responsible for the selection of subjects and speakers for the monthly meetings of the auxiliary members themselves and their guests who are representative of the entire community. A few of the program arranged for one particular auxiliary are characteristic of the thought-provoking subjects which are being presented — by physicians — to the organized auxiliary women of Illinois through the earnest efforts of their leaders: "Medical Aspects of Selective Service," "New Developments in the Field of Nutrition," "Tuberculosis in Children," "Hand to Mouth" (a sound motion picture on infectious diseases prepared under medical supervision), "Current Events in Medicine," "An Evaluation of Recent Popular Books on Medical Subjects," "Control of Cancer," and "Recognition and Exposure of Quackery."

The value of women's organizations to the public relations program of many established groups is widely known — witness the active auxiliaries of such organizations as the National Association of Manufacturers, the American Legion, the American Federation of Labor and thousands of hospitals, churches, lodges and service clubs which have found that a militant woman's group serves to extend their usefulness and help to interpret the activity of their respective organizations to the public. That organized medicine accepts the pattern established by no group outside the profession is too obvious to need repetition here; but medicine cannot afford to rest complacently on its scientific laurels at this critical time and refuse to accept any ethical and demonstrably effective means at its disposal to extend public understanding of health and medical subjects and public recognition of the values inherent in the practice of medicine the American way.

It is natural that the doctors' wives who have been devoted to and active in auxiliary work during the past decade should have become exceedingly conscious of their duty and loyalty to the medical profession: they themselves first became better acquainted with the part medicine plays in the affairs of men; their enthusiastic desire to spread this knowledge, under the supervision of the medical society's advisory committee, to their lay friends and associates is an inevitable consequence. The results of their past performance demonstrate that their work has been immeasurably valuable to the profession. A past president

of the National Woman's Auxiliary said recently: "The woman's medical auxiliary is becoming recognized as one of the most potent factors in disseminating wholesome medical education to the lay public." The principles of medical ethics (Chapter IV, Section 1) state: Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of humanity. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine."

Is this solemn obligation discharged in full when any opportunity to counsel and advise the public is being overlooked? The doctors' ladies of Illinois have demonstrated that they are competent and eager to assist the profession in the education of the public.

Can we fail — in any particular — to implement their competence?

Advisory Committee to the Woman's Auxiliary of the Illinois State Medical Society
Harold M. Camp
Everett P. Coleman
Edwin S. Hamilton
Rollo K. Packard
Frank P. Hammond, Chairman

MILITARY MANPOWER IN THE UNITED STATES

The military manpower of the United States at the present time, according to statisticians of the Metropolitan Life Insurance Company, amounts to 28 million between the ages of 18 and 44 and this number is expected to increase to a high point of 30.3 million about the year 1955. Then it is expected to decrease so that by 1980 there will be 28.4 million men of military ages, or 18.5 per cent of the total population. The total population of all ages, however, will continue to increase until about 1980.

The number of men between the ages covered by the present Selective Service Act, that is, ages 21 to 35, increased from about 10 million in 1900 to almost 16.4 million in 1940.—*Illinois Dental Journal, July, 1941.*

SURGICAL EXPERIENCES — 1918

One case operated upon by me during the last war showed that occasionally severity of wounding is compatible with recovery despite unfavorable surgical environment, disordered transport, and the necessity of premature evacuation.

On the first day of the enemy attack an officer received a left-side abdominothoracic wound, which necessitated a transdiaphragmatic splenectomy, the closure of two large wounds in the stomach and the repair of the diaphragm, pleural "toilette" and the closure of the chest wound. He was evacuated on an open truck less than 24 hours after his operation. Despite difficulties of that period of turmoil, the officer was able to write subsequently from Ireland thanking me for the part which I had played in promoting his recovery, and expressing his eagerness and almost feverish anxiety to return to France and rejoin his South Irish Division.

In the summer of 1918, an Australian officer who had undergone a resection of damaged small intestine from high-explosive, and whose abdomen has been closed hurriedly by through-and-through sutures, was immersed in the sea as a result of the torpedoing of the hospital ship "Warilda." The man was dragged by a rope around his waist into a destroyer; he made a good recovery and appeared little worse for his adventure.

In this war the chances of recovery of an abdominal case from such an outrage have been prejudiced still further by the air-bombardment of wounded in the water, a practice which has been freely indulged in by the German, even upon his Italian allies, and few that had already been wounded in the belly could have survived. The dropping of incendiary bombs upon shipwrecked men struggling in oil covered water inflicts upon the wounded and unwounded a death so horrible that only perverted mentality could have conceived it.—*Rear-Admiral Gordon Gordon-Taylor, M.S., F.R.C.S., F.R.A.C.S., The Practitioner, July,* 147: 448-462, 1941.

The doctor had two children who were considered the prettiest little girls in the district.

While out walking one day, they passed two small boys: one lived in the village and the other was a visitor.

"I say," said the latter, "who are those little girls?"

"They're the doctor's children," replied the village boy. "He always keeps the best for himself."

Clinicopathologic Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY
E. L. Benjamin, M.D.

Evanston Hospital Association

EVANSTON

CASE 1—CARCINOMA OF THE GALLBLADDER

William Gill: This 71 year old, widowed, white female was admitted October 6, 1941, complaining of generalized jaundice and pruritus, acholic stools, and weakness of a week's duration. She had lost 10 pounds in the past year. Physical examination was normal except for the generalized icterus. Her blood pressure was 185/110. Laboratory examination: Hemoglobin 14.5 grams (94 per cent); erythrocytes 4,960,000; leucocytes 9,400. Urinalysis was normal except for the presence of bile pigment. The blood cholesterol was 303 mg. and the icterus index was 41.0 units. Repeated stool examinations were positive for occult blood by the benzidine test. A roentgenogram failed to reveal gallstones. Electrocardiogram: "Left bundle branch block and gross myocardial damage." On October 10 the prothrombin time was 77 per cent of normal. Oral administration of vitamin K and bile salts was started and on October 13 and October 17 the prothrombin time was 80 per cent of normal.

On October 18 under ethylene and ether anesthesia a cholecystectomy was performed. Following resection of 3 cm. of the common duct, an end-to-end anastomosis was performed over a "T" tube. Sixteen hours after operation the patient presented all the symptoms of peripheral circulatory collapse which responded to general supportive measures. An electrocardiogram on October 20 revealed numerous ectopic beats and left bundle branch block. The icterus index rose to 76 and the nonprotein nitrogen to 120. Bile was in the urine. Ivy bleeding time was one minute; an immediate direct Van den Bergh reaction was present. Thereafter she ran a gradual downhill course and expired on October 24, the fifth postoperative day and about 18 days after the onset of her illness.

The preoperative diagnosis was chronic cholecystitis and cholecystolithiasis. The final diagnosis was coronary insufficiency and terminal pneumonia.

E. L. Benjamin: The rigid, contracted, pyramidal-shaped gallbladder removed at operation was 9.5 cm. long. Fifteen millimeters of the thickened cystic duct was attached. The serosal surface was roughened by fatty fibrous tags. The fibrous wall varied from 3 to 4 mm. in thickness. A small amount of pale bile and 60 pale gray, facetted stones, 7 to 8 mm. in diameter, were present. One stone was in the cystic duct. The fundic mucosa was finely granular and yellow. The mucosa of the cystic duct was pale yellow and velvety; the wall was indurated. A small piece of common duct was also received.

The microscopic picture was that of a malignant neoplasia of the mucosa forming slight villous projections of columnar epithelium and



Figure 1—Papillary carcinoma of the gallbladder showing the abrupt transition from normal to malignant mucosa and the subepithelial pervasion by malignant glands. X 200

also pervading the fibrous wall in the form of anaplastic cell nests (figure 1). The perineural lymphatics contained tumor cell emboli. The mucosa of the cystic and common ducts also contained isolated areas of malignancy suggesting a multicentric origin even though the walls of these structures were also pervaded and the lymphatic vessels and the perineural lymphatic channels contained tumor cell emboli. A heavy desmoplastic reaction was present.

Necropsy was performed one hour and forty minutes after death. The body was well proportioned and slightly obese; the entire skin was the color of saffron. The conjunctivas, lips, and buccal membranes were yellow. A recent, oblique, right rectus laparotomy wound, 22 cm. long, contained a rubber tube in its upper pole which was a continuation of the "T" tube over which the partially resected ductus choledochus had been sutured. Separation of the skin sutures exposed a gaping wound with edematous, bile-stained walls, focal necrosis of the subcutaneous fat tissue, and a bulging floor formed by inflamed, bile-stained, distended bowel and the omentum. The bed of the recently removed gallbladder, the hepatic flexure of the colon and adjacent structures were united by a delicate fibrinous exudate to form a cavity filled with turbid, yellow, fibrin-flecked fluid. The drainage tube was enclosed in a delicate yellow tract of granulation tissue. The lesser omental cavity, lower abdomen, and pelvis contained considerable clear, thin, yellow fluid. The retroperitoneal tissue in the abdominal gutters was edematous. The right dome of the diaphragm was elevated to the level of the fourth rib; the left dome was level with the fifth rib. The pericardial sac contained about 50 ml. of thin, clear, yellow fluid. Five hundred milliliters of a similiar fluid was present in each pleural cavity.

The small thyroid gland weighed 18 grams. Except for several small fetal adenomas it revealed no significant changes. The heart weighed 240 grams. The coronary arteries exhibited a high grade atherosclerosis with calcification and extreme narrowing of the anterior descending branch. The firm myocardium was yellow-brown; a contracted linear scar, 2 cm. long, was in the muscular septum. The margins of the mitral valves were thickened; the bases of the aortic cusps were calcified and the tricuspid valve was dilated. High grade atherosclerosis was seen in the aorta and its major branches. The trachea and bronchial tree were filled with mucopurulent material. The bases of both lower pulmonary lobes were atelectatic; the rest of the lung parenchyma was congested and edematous. Moderate emphysema was also present.

The liver weighed 1,600 grams. Except over the inferior surface and lower border of the ventral surface of the right lobe, the capsule was smooth and transparent. The abnormally firm, dark olive green parenchyma was composed of distinct lobules. The bile ducts were distended with pale yellow bile. The gallbladder and cystic duct were absent. The inferior surface of the right lobe was granular and dark red to yellow-gray. The silk sutures approximating the divided common duct had partly sloughed out to permit separation of the necrotic, severed ends of the ducts. The "T" tube was in posi-

tion. The hepatic, subpyloric, and peripancreatic lymph nodes were moderately enlarged, firm, and pale green-gray and on section revealed some firm, granular areas. The kidneys exhibited moderate senile atherosclerotic changes. There were several polyps in the lesser curvature of the stomach. The internal genitalia were atrophic.

The pertinent microscopic findings were as follows: An early obstructive biliary cirrhosis with moderate fatty change of the liver was characterized by numerous bile ducts surrounded by edematous connective tissue infiltrated with small round cells. These ducts as well as the canaliculae were filled with masses of inspissated bile. The cells of Kupfer were also heavily laden with bile pigment. Many of the hepatic cells at the periphery and central portions of the lobules were pigmented and undergoing degeneration. The hepatic, subpyloric, and peripancreatic lymph nodes were extensively involved by metastatic cancer. The latter assumed the form of irregular alveoli and ducts lined by columnar and cuboidal epithelium, exhibiting considerable hyperchromatism, numerous mitoses, and variation in size and shape. An acute inflammatory reaction was present in the capsule of the pancreas, the peripancreatic fat tissue, and first portion of the duodenum. There was an acute inflammatory reaction and engorgement of the spleen. The kidneys exhibited small triangular cortical areas of arteriosclerotic atrophy and beginning icteric nephrosis as characterized by enlarged, swollen, degenerated epithelial cells containing bile pigment. Some of the degenerated epithelium was desquamated.

The essential anatomic diagnosis was: Status post cholecystectomy; resection and anastomosis of the ductus choledochus with "T" tube drainage; metastatic carcinoma of the hepatic, subpyloric, peripancreatic, and peri-aortic lymph nodes; obstructive biliary cirrhosis; choleperitonitis (right upper quadrant); generalized senile atherosclerosis, grade IV; stenosis of the anterior descending branch of the left coronary artery; scar (healed infarct) of the interventricular muscular septum of the heart; brown atrophy of the myocardium; dilatation of the tricuspid valve (relative insufficiency); pulmonary emphysema; bilateral basal pulmonary atelectasis; bilateral hydrothorax, hydropericardium, and ascites; multiple polyps of the gastric mucosa; icterus gravis; infected, oblique, right rectus laparotomy wound.

CASE 2—CARCINOMA OF THE GALLBLADDER

William Gill: This 56 year old, married, white female was admitted September 24, 1941, complaining of generalized jaundice and pruritus of two weeks' duration. Intermittent epigastric distention had been present for a month. Physical examination revealed a marked generalized icterus. The liver edge was palpable 6 cm. below the right costal margin and a spherical mass, the gallbladder, could be felt about 4 cm. below the liver edge. The blood pressure was 140/85.

On September 24 a roentgenogram of the abdomen showed three large gallstones: two low in the abdomen and the other near the liver margin. On September 25 the hemoglobin was 14 grams (90 per cent); erythrocyte count was 4,660,000; and the leucocyte count was 7,500. Urinalysis was reported as normal. The icterus index was 66.6.

Cholecystitis, cholelithiasis, and obstruction of the common duct was diagnosed. On October 2, 1941, cholecystectomy and drainage of the common bile duct and right hepatic duct was performed under ethylene-oxygen and ether anesthesia. Bile began to drain freely on the first postoperative day. The patient's postoperative course was normal until the twenty-first day when she suddenly became dyspneic and a tachycardia developed. Supportive measures were unsuccessful and she expired six hours after the onset of this episode, 22 days after operation, and about three months after the first symptoms of her fatal illness.

E. L. Benjamin: The gallbladder removed at operation was 10 cm. long. The tough, rigid walls were 1 to 3 mm. thick. Three dark green, mottled yellow, facetted concretions, 18 to 25 mm. in diameter, and a small amount of clear mucoid fluid were present. The yellow mucosa was slightly granular. Fluid from the common duct was chemically negative for bile. Microscopic sections revealed a hyalinized collagenous connective tissue, little muscle, a few blood vessels, and a few isolated cell nests of moderately anaplastic columnar epithelium irregularly distributed in the wall and in the perineural lym-

phatics (figure 2). In many places the mucosa was absent but where present it was represented by a single layer of columnar cells some of which were malignant.

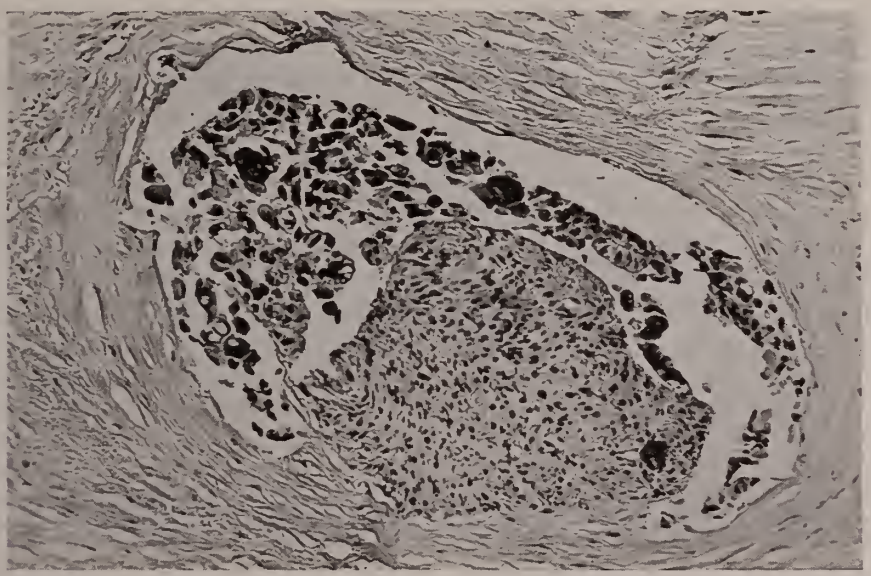


Figure 2—Perineural lymphatic metastasis in the wall of the gallbladder. X 200

The necropsy upon the body of this emaciated, jaundiced, 56 year old female was performed two hours after death. A few small subcutaneous ecchymoses were scattered over the lower extremities. Two rubber tubes emerged from the upper pole of a healing right pararectus laparotomy wound, 20 cm. long. One of the tubes, a catheter, entered the hepatic duct. A "T" tube passed into the common duct. The latter was indurated and stenosed distal to the "T" tube. The firm, dark olive green liver extended 3 cm. below the right costal margin. Bile peritonitis was present in the right upper quadrant and areas of chalky focal necrosis were seen in the fat tissue and about the head of the pancreas. The lungs were emphysematous; the basal portions were congested and edematous.

The pale brown heart weighed 255 grams. A few subepicardial petechiae were present. The aorta was only slightly atheromatous. The liver, pancreas, duodenum, stomach, and esophagus together weighed 1,960 grams. Multiple sectioned surfaces of the liver were firm, dark green, and distinctly lobulated. The distended bile ducts were filled with pale mucoid material. The hepatic ducts were somewhat enlarged, firm, dark gray-green, and contained a few small, firm, granular areas. The bed of the absent gallbladder was finely granular and pale yellow. The ductus choledochus was 65 mm. and the ductus hepaticus was 30 mm. long. The circumference of the former was 20 mm.; of the latter, 7 mm. The large bile duct just within the liver substance was 21 mm. in circumference. The mucosa of the ducts was pale yellow. Mucosal hemorrhages in the gastric mucosa were responsible for the presence of tarry, bloody material in the small bowel. The pancreas contained a few pinpoint-sized necrotic areas.

Both kidneys were light yellow-green and slightly swollen. The right weighed 123 grams and the left, 120 grams. The markings usually seen on the surfaces made by sectioning were obscured. The internal genitalia were atrophic. The corpus uteri contained several intramural and subserous leiomyomas. A benign polyp was in the cervix.

The essential microscopic findings in this case were similar to the previous one, i.e., metastatic carcinoma of the walls of the extrahepatic biliary ducts and hepatic lymph nodes. Obstructive biliary cirrhosis; focal necrosis of the pancreas; and icteric nephrosis.

The anatomic diagnosis was: Status post cholecystectomy; drainage of the left tributary of the hepatic duct and common duct; obstructive biliary cirrhosis; icteric nephrosis; focal necrosis of the pancreas (head); pulmonary emphysema; bilateral hypostatic pulmonary congestion and edema; leiomyomas of the uterus; polyps of the cervix; icterus gravis; subepicardial petechiae; hemorrhagic erosions of the gastric mucosa; melena; right pararectus laparotomy wound.

DISCUSSION

These two cases of cancer of the gallbladder, terminating so close together, are the sixth and seventh instances occurring in this hospital during the past five years; six were found during the last two and one-half years. The incidence is about comparable to that of the Memorial Hospital (1.22 per cent, Pack and LeFevre). Carcinoma of the gallbladder and gallstones are much more frequent in females. The average age for cancer of the gallbladder is 57 years. Both of our cases were females, both had chronic inflammation and concretions of the gallbladder and their ages were 71 and 56 years respectively. Metastatic deposits were only regional. Peritoneal extensions of the malignancy constricted the ducts (a stone obstructed one) and a common method of extension, i.e., perineural lymphatic metastases, was quite prominent. Obstructive and regurgitation jaundice caused an obstructive biliary cirrhosis associated with icterus (cholemia) and icteric nephrosis. Eighteen and ninety days were the respective durations of the clinical manifestations of the disease.

CASE 3—RECTICULUM CELL LYMPHOSARCOMA OF THE GASTROINTESTINAL TRACT

Walter S. Priest: I first saw this 67 year old man in March, 1941. In April, 1940, the diagnosis of Hodgkin's disease had been made from the x-ray findings of a large mass in the hilum of the right lung and a mass in the cardia of the stomach. The patient was given extensive x-ray treatment until the first of January, 1941. When I first saw this patient the peripheral lymph nodes were not palpable. His first complaint at this time was rectal pain, severe enough to confine him much of the time to his bed. A perirectal abscess and small hemorrhoidal tags were found on rectal examination. He was first admitted to the Evanston Hospital March 24, 1941. Doctor Nesselrod will tell you later of his proctoscopic findings. He remained in the hospital until April 17 during which period he received four blood transfusions for an aplastic type of anemia. When he left the hospital his red count was in the neighborhood of four million and his hemoglobin 75 per cent. By the sixth of May his hemoglobin had dropped to 66 per cent, his red count was 4,250,000, and the white count was 5,200. The differential count was essentially normal. By the second of June his hemoglobin had dropped to 52 per cent, his red cells to 3,780,000 but the white count had increased to 9,100. Triweekly injections of liver extract were given for several weeks. Following this the hemoglobin rose to 78 per cent and his red cell count went up to four million. On July 8 it was noted that his left tonsil had enlarged so that it practically filled the pharynx. This enlargement apparently had occurred over a period of three weeks. After consultation with Doctors Galloway and Soper, x-ray therapy was directed toward the enlarged tonsil. The enlarged tonsil promptly was reduced to normal size. On August 12, 1941, liver was again given for the falling blood count. At this time a small subcutaneous tumor in the left breast was removed. The microscopic diagnosis was reticulum cell lymphosarcoma. The progressive anemia failed to respond to therapy. By October 8 his hemoglobin had dropped to 44 per cent, his red cells to 3,300,000, and white cells to 6,000. There was 41 per cent polymorphonuclear leucocytes present.

From April until October the patient's subjective condition had improved. He felt stronger, was able to drive a car, and enjoyed life quite well. However, after October 10 he began to feel weaker and he looked anemic. His hemoglobin was 55 per cent. Six days after a blood transfusion his hemoglobin was 53 per cent, his red count was 3,540,000, and the white count was 4,000. The differential examination revealed one myelocyte, there was considerable anisocytosis, moderate poikilocytosis, and polychromatophilia. He then commenced to experience difficulty from watery diarrhea. Opium and bismuth subnitrate failed to control this difficulty.

At 11:30 a.m. on November 8 he developed a sudden pain in his abdomen which was not relieved by codeine, aspirin, or neumbutal. After the pain failed to subside I was called to see him

at 2 p.m. and made a diagnosis of acute surgical abdomen. The flanks were dull and tender. The distended abdomen was soft and definite rebound tenderness was not observed. His pulse was 102 and fair quality. He was immediately sent to the hospital. The causes of his acute abdominal condition were considered to be perforation of the bowel involved by the lymphosarcomatous process or frank hemorrhage into the peritoneal cavity from an erosion of the vessel by the tumor. Intestinal obstruction and acute appendicitis with rupture were also considered. Because of his poor general condition we wished to avoid surgery if possible. With the hope that the condition was an intestinal obstruction, a Wagensteen tube was inserted and he was observed for three hours. During this period the red blood count and hemoglobin did not fall and his pulse remained under 100 and of good quality. At no time did the leucocyte count go above 7,000. The abdomen did not become board like. After three hours of gastric decompression without affect on the abdominal distention, a laparotomy was performed by Doctor Hobart.

J. P. Nesselrod: On March 26, 1941, sacral anesthesia was established to facilitate both the proctoscopic examination and the surgical treatment of an anal fistula. The proctoscopic report is as follows: "There is a draining sinus on the right posterior 1 cm. from the anal margin. The primary opening of the fistulous tract lies immediately to the right of the posterior midline in the dentate margin. In addition there are several other deeply scarred anal pockets. The anal canal is contracted, grade III, due to the extensive development of scar tissue. Throughout the rectum I find numerous submucosal nodules from 2 mm. to 2 cm. in diameter which lend a coarse, pebbled appearance to the gut wall. The overlying mucous membrane is intact but easily traumatized. There is no evidence of rectal valves. The lumen of the rectum is narrowed one-half. Tissue was removed for microscopic study and still and moving pictures were made in color."

N. D. Smith (1933) found that lymphosarcoma of the rectum and sigmoid is rare. The final diagnosis depends on histopathologic study.

M. H. Hobart: I first saw this man with Doctor Priest for a small tumor of the left breast which was removed under local anesthesia. I saw him again about ten days ago for an acute condition within the abdomen. Although the abdomen was well distended and tender, boardlike rigidity was absent. His white blood count was a little over 7,000. No relief followed Wagensteen decompression. An x-ray flat plate of the abdomen revealed no signs of obstruction. A large mass the size of a fist was felt above the navel. At laparotomy a large quantity of thin, cloudy fluid was found. The mass palpated on external examination was located in the mesentery of the small intestine. The spleen was about half the size of a man's head. A fecal discharge located in the right lower abdominal quadrant came from a perforation located in the tumorous wall of the intestine. This part of the intestine tore easily. As it was impossible to rsect the bowel the first stage of a Mikulicz's operation was performed. Thirty-six hours later the intestine was opened. After the operation he became progressively weaker. One or two bowel movements occurred. The Mikulicz's opening drained; his fever became higher, he lapsed into unconsciousness, and died on the sixth postoperative day.

E. R. Crowder: This patient was given a total of 12,800r from April, 1940, to August, 1941; of that amount, 11,200 was given elsewhere; 1,600 was given here. The first series of treatments which we did for this man was done because of an enlarged left tonsil which was interfering with his breathing and swallowing. He was given 1,100r (skin dose) to a small area over the cervical region. An excellent and prompt response to the treatment was obtained.

The second series of treatments was begun in an effort to combat the patient's anemia. Because of the fact that the patient had had rather large doses of x-ray treatments previously, it was not possible to determine whether the patient's anemia was due to a failure of function of the red blood forming organ due to hyperplasia of the reticulo-endothelial cells in the bone marrow, or due to a destruction of the red blood forming organ by x-ray treatment. We, therefore, gave two rather small doses of general body radiation and awaited results. No favorable results regarding the anemia were obtained. The treatment was, therefore, discontinued because we felt it was inadvisable to add further insult to the red blood forming organ, if the

anemia was due to x-ray damage. An anemia in this class of disease, which includes chronic leukemia, will frequently respond favorably to general body radiation. In this case we could not be sure of the cause of the anemia. The treatment was, therefore, not completed.

In the treatment of this disease with x-ray, two methods can be employed: (1). The treatment of the local lesions by relatively large doses of x-ray. (2). The treatment of large areas of the body or of the whole body with relatively small doses of x-ray. It has been found that when small doses are used on large areas of the body, it is posible to exclude the local lesions from any effect by direct radiation and still obtain a decrease in the size of these lesions and a satisfactory remission of the disease. The fact that a remission of this disease can be produced by x-ray treatment when the obvious site of disease is excluded from the field of treatment, raises many interesting points for speculation. The most obvious explanation for this observation is that in the treatment of the whole body with radiation, an intermediate product is produced which brings about a remission of the disease which has not been directly radiated.

Reticulum cell lymphosarcoma and Hodgkin's disease respond in the same manner to x-ray treatment. They each have a high degree of radio sensitivity; and they each exhibit the phenomena of response to whole body radiation. These two diseases are similar in many other ways. The greatest difference between these two diseases is in their morphologic characteristics. When morphologists encounter difficulty in differentiating between the two diseases from a microscopic preparation, they sometimes solve the problem by a compromise and call the disease Hodgkin's sarcoma. This compromise suggests that when differentiation on a morphologic basis is difficult, we may be dealing with a case which occupies a middle ground between the extremes of a single disease. There are, in short, several reasons for regarding reticulum cell lymphosarcoma and Hodgkin's disease as the same disease.

Because these tumors can be reduced in size by an intermediate product which is produced when x-ray is absorbed in normal tissue of the diseased individual, it seems advisable to reconsider the classification of the disease. It is possible that reticulum cell lymphosarcoma may be more closely allied to pernicious anemia than it is to neoplasm.

E. L. Benjamin: The body of this 66 year old white male was considerably emaciated and moderately jaundiced. Although the superficial lymph nodes were not palpable on external examination, dissection of the axillary tissue exposed a few small, gray-red lymph nodes about the size of a pea. A recent midline laparotomy wound, 18 cm. long, presented in its midportion a double-barrel ileostomy. The wound was closed by metal skin clips and three deep retention sutures. When opened the wound revealed necrotic walls extending down to the peritoneum, bathed in considerable purulent material. Clos. welchii and Esch. coli were cultured from the pus. Approximately 300 ml. of yellow, milky fluid was in the abdominal cavity. The mass previously described was the size of a fist and occupied the mesentery, over which passed the duodenum and jejunum. Considerable fatty tissue was deposited in the mesentery, omentum, and anterior abdominal wall. Many of the loops of the slightly distended small bowel were agglutinated by a thick, fibrinopurulent exudate, which when separated exposed loculated areas of creamy pus between the folds of the mesentery. The retroperitoneal tissue was very edematous. Sectioned surfaces of the mesenteric tumor displayed a pale gray, uniformly granular composition which was fairly firm except where it was softened by areas of hemorrhagic degeneration. The right pleural cavity was completely obliterated by old fibrous adhesions.

The thyroid gland weighed 32 grams. The upper pole of the right lobe contained an encapsulated fetal adenoma, 12 mm. in diameter. The slightly enlarged heart weighed 410 grams. The usual amount of subepicardial fat tissue was present and the epicardium and endocardium were intact. The foramen ovale was open. The soft, light brown myocardium contained no gross scarring. The coronary vessels exhibited grade II atherosclerosis without calcification or stenosis. The aorta and its major branches were involved only slightly by atherosclerosis.

Each lung weighed 510 grams. Except for edema and congestion they exhibited no significant changes. The right peribronchial lymph nodes were moist, black, and enlarged. The largest was 2.5 by 2 by 1 cm. Its sectioned surfaces were pale gray. The regional lymph nodes

exhibited no gross noteworthy features. The pale yellow-brown liver weighed 1,970 grams. The gallbladder and extrahepatic biliary passages were normal. The hepatic lymph nodes were moderately enlarged.

The large spleen weighed 620 grams. Its capsule was slightly thickened. Multiple sectioned surfaces revealed a fairly firm, pale gray-red pulp in which were distributed myriads of gray nodules with irregular borders, varying from 3 to 8 mm. in diameter. The pancreas only weighed 55 grams and revealed no gross noteworthy features. However, numerous enlarged lymph nodes surrounded the head. The esophagus was normal and the stomach was practically empty. Arising from the ventral wall near the lesser curvature of the gastric cardia was an oval, semifirm, polypoid tumor mass, 3.5 by 2 by 2.5 cm., covered by a black-stained, glistening mucosa. Large, prominent, hyperplastic rugae were present in the prepyloric and pyloric regions of the stomach. Most of the pale gray gastric mucosa was covered by viscid, black, mucoid material. The first portion of the duodenum also contained semi-soft, elevated, polypoid masses of neoplastic tissue covered by intact mucosa. Similar infiltrations were present in the terminal 10 cm. of the ileum, the cecum, lower portion of the sigmoid colon, and the rectum. The ileocecal valve was slightly thickened but covered by a moist, intact mucosa. The mucosal masses in the rectum measured up to 10 mm. The vermiform appendix was swollen to the size of a little finger. Its thick wall was pale gray.

The right adrenal gland weighed 10 grams and the left, 12 grams. Except for a cortical adenoma of the left gland, these organs were normal. Each kidney weighed 140 grams. The slightly thickened, adherent capsule covered a finely granular, pale gray to yellow surface irregularly pitted by shallow depressions. Sectioned surfaces everted slightly and the corticomedullary differentiation was not distinct. Except for a few pinhead-sized hemorrhages in the mucosa of the renal pelvis, no gross significant changes were noted. The urinary bladder and prostate gland were grossly normal. The medullary cavity of the left femur in its upper one-third contained soft, raspberry red marrow.

The pertinent microscopic findings of the right peribronchial, hepatic, and peripancreatic lymph nodes, mesenteric tumor mass, spleen, and polypoid masses of the gastrointestinal tract consisted of an extensive malignant neoplasia of the reticular cells in intimate relation with reticular (argyrophil) fibers. Most of the large lymph nodes had lost their normal architecture because of the diffuse cellular overgrowth. Similar changes were noted in the spleen. The walls of the stomach and intestine were extensively pervaded. The polypoid masses projecting into the lumen were also composed of reticular cells causing complete obliteration of the mucosa in many places. The tissue was very vascular. The hyperplastic femoral bone marrow contained islands of proliferating reticular cells and reticular fibers.

The anatomic diagnosis was: Reticulum cell lymphosarcoma of the gastrointestinal tract, right peribronchial and abdominal lymph nodes, spleen, and bone marrow; fibrinopurulent peritonitis (Clos. welchii and Esch. coli); recent, infected laparotomy wound; double barrel ileostomy; cloudy swelling of the liver and kidneys; moderate cardiac hypertrophy; cortical adenoma of the left adrenal gland; pulmonary edema and congestion; fibrous obliteration of the left pleural cavity; icterus levis; surgical scar of the left mammary region; patent foramen ovale.

DISCUSSION

The rectal biopsy taken by Doctor Nesselrod revealed vascularized granulation tissue. Although the tonsil, subcutaneous tissue of the left mammary region, some of the lymph nodes of the mediastinum and abdomen were involved, the most dramatic manifestations of the disease occurred in the gastrointestinal tract and the symptoms produced there predominated the history of the disease. The widespread neoplastic pervasion of the wall of the ileum caused an ischemic necrosis in one area sufficient to cause perforation, peritonitis, and death.

Although this type of tumor usually decreases in size with adequate x-ray therapy, the remission eventually is followed by recurrence and a fatal termination.

Preacher: "Now, class, what is false doctrine?"
Andrew: "I know, bad medicine."

Patient: "Doctor, I am worried and afraid. This is my fifth operation."

Doctor: "Your fifth? What are you worrying about? It is my first."

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

COMING MEETINGS

March 10 — Bureau County Medical Society — Spring Valley, St. Margaret's Hospital — dinner 6:30 — Lindon Seed — "Goiter."

March 10 — Effingham County — Effingham, Benwood Hotel — 7:30 P.M. E. Lee Dorsett of St. Louis — "Treatment of Pre-Eclamptic Toxemia and Eclampsia."

March 12 — Union County Medical Society — 6:30 — Anna — W. J. Morginson — "Pre-Cancerous and Cancerous Skin Lesions."

March 13 — Jersey-Greene County Medical Society — Carrolton — 6:30 — W. C. Scrivner — "Cancer."

March 13 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet — 12:00 noon — Frederick H. Falls — "Diagnosis of Early Carcinoma of the Uterus.

March 17 — Knox County Medical Society — Galesburg Club, Galesburg. 6:00 P.M. — Charles Edwin Galloway, "Anesthetics in Obstetrics" and H. Close Hesseltine, "Citamins in Obstetrics and Gynecology."

March 20 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet — 12:00 noon — Paul C. Bucy, "Physiology of the Nervous System."

March 27 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet — 12:00 noon — R. T. Pettit, "Cancer of the Stomach, Surgery Plus Radiation."

April 7 — Bureau County Medical Society — St. Margaret's Hospital, Spring Valley — 6:30 P.M. — Eugene Cary, "Management of Occiput Posterior."

CLINICAL CONFERENCE DAY

Belleville, Illinois

April 9

The Post-Graduate Committees of the Illinois and Missouri State Medical Societies are sponsoring for the first time a joint clinical conference day for the doctors of Illinois and Missouri on APRIL 9th, Belleville, Illinois.

The following program has been tentatively arranged to appeal to doctors in all fields of work:

9:00- 9:25 A.M.—"Five Day Treatment of Syphilis" — speaker from Missouri

9:30- 9:55 A.M.—"Fractures, handling of accident cases" — Carlo S. Scuderi, M.D. — Chicago

10:00-10:25 A.M.—"Urology — diagnosis and significance of Hematuria" — Missouri speaker.

10:30-10:55 A.M.—"Endocrinology" — James H. Hutton, M.D. — Chicago

11:00-11:25 A.M.—"Geriatrics" — speaker from Missouri

11:30-12:00 A.M.—Round tables led by above speakers

12:30- 1:30 P.M.—Luncheon

G. C. Otrich, M.D., Councilor of the 10th District will preside.

Hugh Neilson, M.D., Chairman of the Missouri State Medical Society Post Graduate Committee, will speak on "Post-Graduate Education in Missouri." He will introduce the President and Secretary of the Missouri State Medical Society.

1:30- 2:30 P.M.—HEART FORUM — conducted by Robert S. Berghoff, M.D., Chairman Illinois State Medical Society Post-Graduate Education Committee — as-

sisted by two specialists from Illinois and Missouri.

Doctors attending the conference will be asked to deposit in a special box before the luncheon, questions which they wish to have discussed and answered by the clinicians.

2:30- 2:55 P.M.—"General Medicine" — speaker from Missouri

3:00- 3:25 P.M.—"The Role of Fluid Balance in Pediatrics" — Walter M. Whitaker, M.D. — Quincy, Illinois

3:30- 4:00 P.M.—"urgery of the Chest" — speaker from Missouri

4:00- 4:30 P.M.—"Psychiatry — Recognition of the Psychopathic State in the Selectee" — speaker from Illinois

4:30- 5:00 P.M.—ROUND TABLES led by above speakers

5:00- 6:00 P.M.—Social Hour

6:30 P.M.—Dinner — G. C. Otrich, M.D. will preside. Robert S. Berghoff, M.D. will introduce the President and Secretary of the Illinois State Medical Society and it is hoped the Governors of Missouri and Illinois.

8:00 P.M.—Speaker on some phase of War Medicine.

Official announcements will be sent to all doctors in southern Illinois and the St. Louis area of Missouri who in the meantime are asked to reserve this date of April 9th at Belleville.

Dr. J. P. Greenhill addressed the Obstetrical Society of Boston February 17th on the subject "The Use and Potency of Synthetic Estrogens." On February 18th he read a paper before the Buffalo Academy of Medicine on "The Essentials of Office Gynecology."

At the annual meeting of the Chicago Dermatological Society held January 21, 1942, the following officers were elected for the ensuing year: President, Dr. Udo J. Wile of Ann Arbor, Michigan; Vice-President, Dr. Marcus R. Caro of Chicago and Secretary-Treasurer, Dr. Michael H. Ebert of Chicago.

The Second American Congress on Obstetrics and Gynecology will be held in St. Louis, April 6-10. Leading gynecologists, obstetricians, nurses, hospital administrators, public health officials and medical educators are participating in the program. The material presented is designed to reach not only specialists but general practitioners, nurses and all those others interested in maternal care and the reduction of mortality and morbidity among mothers and newborn babies. Further information concerning the program may be secured by writing the office of the Congress at 650 Rush Street, Chicago.

DEATHS

Justus Corbly Garard, Chicago; University of Illinois College of Medicine, 1905; member of the staff of St. Anne's Hospital for many years; died February 4, 1942, age 68 years.

James F. Chvatal, Chicago; Rush Medical College, 1893; died January 27, 1942, age 76.

William Dick Cutter, Chicago; Johns Hopkins University School of Medicine, 1905; Secretary of the American Medical Association Council on Medical Education and Hospitals; died January 22, 1942, age 63 years.

Leon Grotowski, Chicago; Chicago College of Medicine and Surgery, 1913; died February 4, 1942, aged 63.

Carolyn N. MacDonald, Chicago, Rush Medical College, a member of the staff of the Women's and Children's hospital and instructor in urology at Northwestern University Medical School. She was a past president of the Chicago Council of Medical Women and a member of the Chicago Zonta Club. She died in St. Luke's Hospital, February 20, 1942, age 54 years.

Harry Lewis Pollock, Chicago; University of Illinois College of Medicine, 1894; formerly otolaryngologist at North Chicago Hospital, recently head of that department at the American Hospital; died January 24, 1942, age 67 years.

Albert Schupmann, Chicago; Homeopathic Medical College of Missouri, 1897; member of the Staffs of Alexian Brothers and North Shore Hospitals; died January 25, 1942, age 79 years.

Charles Lorton Best, Freeport; Rush Medical College, 1904; Dr. Best spent 18 months in surgery at the University of Vienna, returning to Freeport to enter practice in 1907. He was a fellow of the American College of Surgeons, chief of staff at St. Francis Hospital, Freeport, and chairman of the board of the Stephenson County Tuberculosis Association. For the

past eight years he was division surgeon for the Illinois Central railroad. He was a past president of the Freeport Rotary Club, a Mason, and a member of the Freeport Country Club and of the Elks. He died from a heart attack February 6, 1942, aged 62 years.

Gustavus G. Bock, Smithton; Washington University School of Medicine, St. Louis, 1882; for 27 years he had been mayor of Smithton; died February 6, 1942, page 83.

John T. Finley, Prairie du Rocher; Eclectic Medical College, Cincinnati, 1927; mayor of Prairie du Rocher; died of a heart attack January 25, 1942; age 45 years.

John Halpin, Springfield, formerly of Pittsfield; Washington University School of Medicine, 1883; died January 19, 1942.

Lemuel B. Russell, Hoopeston; Rush Medical College, 1894; member of the Masonic lodge and of the Modern Woodmen; died January 23, 1942.

Herman S. Pepoon, Chicago; Hahnemann Medical College and Hospital, 1889; for many years a teacher of botany at the Lake View High School; aged 81; died Dec. 26, 1941, in the Augustana Hospital of carcinoma of the prostate.

Joseph K. Ciesla, Chicago; member of the medical staff of St. Marys' of Nazareth Hospital, died February 18, 1942.

Fred Belzig, Chicago; Chicago College of Medicine and Surgery, 1914; died February 16, 1942.

Hardy Maxey Swift, Mt. Vernon; Physio-Medical College of Indiana, 1895; was Mt. Vernon mayor for three terms and twice a member of the Illinois state legislature; died February 15, 1942, at Mt. Vernon Hospital of injuries received in an automobile accident. He was 71 years old.

Frank Hulburt Booth, Chicago; Rush Medical College, Chicago, 1885; aged 81; died, Dec. 6, 1941, in the Research and Educational Hospital of carcinoma of the bladder.

The Indication for Gross Iron Therapy.—Under normal circumstances the body is able to replenish a depleted iron store from dietary sources alone but at a relatively slow rate. Approximately 25 milligrams of absorbed iron is required to synthesize enough hemoglobin to raise the level one per cent. When one considers that only about 5 milligrams daily are absorbed from an adequate food intake, simple calculation would indicate that some fifty days would elapse before a rise of ten per cent in hemoglobin level could be expected. When by common experience this absorption rate is accelerated ten or fifteen times by the addition of an excess of inorganic iron to the diet, the indication for gross iron therapy becomes obvious.—Philip F. Eckman, M.D.: Indications for Use of Iron in Treatment of the Anemias, Minnesota Medicine, 23:714 (October) 1940.

METAL-FINDER

On May 16 a speaker on the German radio described a new device by which, he claimed, bullets, shell splinters, needles and other metal objects can be readily located. This metal-finder, developed by the firm of Siemens and their medical advisers, depends on the use of a high-frequency oscillator of small intensity. The tuning coil of a small short-wave transmitter is fitted into a sterilisable porcelain probe, 10 cm. long and 10 mm. in diameter; if this coil approaches a metallic substance — such as a splinter in the operation area — the inductance of the coil will change, and hence so will the frequency of the transmitter. The change of frequency, which may be very minute, can be made audible by combining these oscillations with those of a second short-wave transmitter oscillating at a slightly different frequency, and so obtaining oscillations at the beat frequency, amplifying them and passing them to a loud-speaker. The apparatus has an equally good reaction to all metals, including the large group of light metals now being increasingly used which cannot be located by magnetism. It is also extremely sensitive and can trace the minutest particles. Tests carried out during more than a hundred operations have proved its worth, and so far it has never failed, even in such delicate cases as the localisation of a sewing needle in the lungs or a splinter the size of a pin's head in the knee-joint. On the contrary "such difficult operations can only be attempted with the hope of certain success," said the broadcaster, "with the aid of the metal-finder." The apparatus is so sensitive that all metal instruments within a 10 cm. radius must be removed while the probe is in use; porcelain towel-clips have therefore been introduced and have proved satisfactory. The Germans are hoping to begin distribution of the apparatus to hospitals and field hospitals within the next few months.—*The Lancet, May* 31, 1941.

When novocaine first came into use, a local dentist in a nearby town tried it out as an experiment. He injected the drug in the jaw of his patient, an elderly man, and then asked him how he felt. There was no answer. The dentist waited a minute and asked, "How do you feel now?" Still no answer. Nervous, the dentist grabbed a glass of ice water and threw it in the patient's face to revive him. The man jumped up and yelled, "Good Heavens, what ails you? I'm all right. I'm just hard of hearing."

Doctor making ward rounds: "Gentlemen, notice the enormous chest on this man." To the patient, "Do you play a wind instrument?"

Patient: "Yes, I do."

Doctor: "Ah, I was sure of it. Prolonged blowing on a wind instrument is always responsible for such chest development. What instrument do you play?"

Patient: "The accordion, sir."

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SCIENTIFIC BACKGROUND

Mead's Cereal was introduced in 1930, and Pablum in 1932, by Mead Johnson & Company. Since then, the growing literature indicates early recognition and continued acceptance of these products and the important pioneer principles they represent.

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* *Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154—Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60 Proc. Soc. Exp. Biol. and Med., 1934, 32, 241 — N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592*



THE FRONT LINE IS ON MAIN STREET

All-out efforts for a successful conclusion of hostilities demand the hands, brains and hearts of every American. Maintenance of maximum efficiency requires a healthy, well-nourished body. Our men in the armed forces are assured of nutritionally balanced meals, but, the folks at home also need proper nourishment so that they can do their jobs . . . so important to the men in the field.

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Book Reviews

X-RAY TREATMENT OF CHRONIC ARTHRITIS. By Karl Goldhamer, M.D., Associate Director, Quincy X-Ray and Radium Laboratories; Associate Roentgenologist, St. Mary's Hospital of Quincy; Formerly Roentgenologist, University of Vienna. Quincy, Illinois; Radiologic Review Publishing Co. 1941. Price $2.00.

The work is a preliminary report of one hundred consecutive patients suffering with chronic arthritis who were treated with x-ray during the past two years by Dr. Goldhamer. The book was written for the primary purpose of stimulating the interest of the general physician in this type of treatment, and is written more from a practical point of view than from a scientific one.

The fact that the writer has had some twenty years experience with x-ray therapy before coming to this country, somewhat compensates for the fact that the book is based on only a few cases observed over a short period of time. A large portion of the book is devoted to x-ray diagnosis with excellent drawings for demonstrations rather than reproducing the roentgenograms. There is mention of indications and contraindications of treatment, clinical aspects of chronic arthritis, history and pathology.

The book is well written and easy to read. The material should prove to be of interest to the general practitioner who might have occasion to see and treat these cases. The author's technic is carefully given and his results justify a more general employment of this measure in treating chronic arthritis.

HEALTH RESORTS OF THE USSR, edited by I. A. Pertsov, M.D. (The U.S.S.R. Society of Cultural Relations With Foreign Countries).

This little book comes to us at a time when we can only think that the majority of the Russian spas and health resorts, if occupied at all, are caring for Russia's wounded, perhaps, or carrying on their share of rehabilitation work necessitated by the present war.

However, it is well known that Russia has her share of famous European spas and watering places converted into health resorts which fit into the Soviet constitutional declaration that "citizens of the USSR have the right to rest and leisure."

The little book is attractively illustrated to show the advantages of the various resorts. A good deal of space is devoted to the qualifications of the physicians in charge and the work they are doing for the Russian people.

Perhaps in the not too distant future, Russia may be able to turn her attention again to the furthuring of health development in the USSR.

THE MEDICAL CLINICS OF NORTH AMERICA. Vol. 25. Number 6. November 1941. Military Medicine. W. B. Saunders Company. Philadelphia, Penna., Paper, $12.00 per clinic year. Cloth, $16.00 per clinic year.

With the medical profession becoming more and more actively engaged in the all out for victory campaign of our nation, it is only natural that our interests should turn to the phases of medicine pertaining to military procedures.

Dr. Leonard G. Rowntree, Chief of Medical Division, National Headquarters, Selective Service System, Washington, D. C., has written a very comprehensive treatis on the physician in selective service in connection with the army, an article which examining physicians on the local draft boards will find extremely enlightening.

There is included here much material on various phases of war medicine; Tuberculosis, communicable diseases, cardiovascular disease, abdominal emergencies, military ophthalmology, injuries of the ear, nose and throat, dermatology and syphilogy, nutritional, psychiatric aspects of army life, dressings and transportation of the wounded, x-ray examinations of the chest, management of shock, and other problems directly traceable to army life.

The value of this volume can only be appreciated after reading and studying the vast amount of vital material gathered to make up this interesting book.

(Continued on page 32)



EACH NIGHT throughout the nation countless thousands of individuals keep the long, wearisome watch of insomnia. Unwillingly on the alert for trivia—the vagrant thought, the small noise—this restless army searches the dark hours aimlessly and waits for the relief that may come only with complete exhaustion.

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BOOK REVIEWS (Continued)

IMMUNITY AGAINST ANIMAL PARASITIES. By James T. Culbertson, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York. Publishers: Columbia University Press, New York. Price $3.50.

This volume is of textbook quality presenting a comprehensive discussion of natural resistance and acquired resistance against animal parasites. The beginning student, the trained investigator and the general practitioner will find here material of extreme interest and value.

There is an analysis of the literature of this subject which is a very valuable feature of this book. The text, however, is confined almost exclusively to the known tested and proven facts.

Those who wish to further their knowledge in this highly specialized branch of medicine will find the author's text most instructive and valuable.

SHOCK TREATMENT IN PSYCHIATRY. By Lucie Jessner, Ph.D., M.D., and V. Gerand Ryan, M.D. Introduction by Harry C. Solomon, M.D. Grune & Stratton, Inc., New York. Price $3.50.

This small book is a very practical review of insulin, metrazol convulsive and electric convulsive therapy, the three methods in most general use in the treatment of mental diseases.

There is a minute outline giving the details of procedure of each method; the clinical symptoms of hypoglycemia are described, and there are instructions given regarding indications and contraindications regarding the use of each of the various methods. The results obtained with each method are evaluated, and given clearly and carefully.

ARTHRITIS IN MODERN PRACTICE, The Diagnosis and Management of Rheumatic and Allied Conditions. By Otto Steinbrocker, B.S., M.D., Assistant Attending Physician and Chief, Arthritis Clinic, Bellevue Hospital, Fourth Medical Division, New York City. With Chapters on Painful Feet, Posture and Exercises, Splints and Supports, Manipulative Treatment and Operations and Surgical Procedures by John G. Kuhns, A.B., M.D., F.A.C.S., Chief of the Orthopedic and Surgical Service, Robert Breck Brigham Hospital; Assistant Visiting Orthopedic Surgeon, Boston Children's Hospital. W. B. Saunders Company, Philadelphia. Price, $8.00.

This book covers etiology, diagnosis and treatment

(Continued on page 34)



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BOOK REVIEWS (Continued)

of the varied forms of arthritis; atrophic, hypertrophic, spondylitis, febrositis, rheumatic fever, gout, traumatic joint disorders, painful shoulder, backache, sciatica, and many others. It is a practical guide to the diagnosis and treatment of these disorders which form a large part of medical practice.

Dr. John G. Kuhns who won the 1936 Fiske Fund Prize Award for his essay on "Low Back Pain" has contributed chapters to this volume on Painful Feet, Posture and Exercises, Splints and Supports, Manipulative Treatment, and Operations and Surgical Procedures.

While rheumatic disease is not often fatal, it is the most prevalent form of chronic illness, as statistics show that about 5% of our population suffers from some form of rheumatic disease. Arthritis is a subject of prime interest and importance to any medical practitioner.

NEUROANATOMY. By Fred A. Mettler, A.M., M.D., Ph.D., Professor of Anatomy University of Georgia School of Medicine, Augusta, Georgia. The C. V. Mosby Company, St. Louis. Price $7.50.

The author, a fine and accurate student of anatomy, has prepared this volume for the needs of the medical student and to prepare him for the demands which will be placed upon him after he enters the practice of medicine.

The first part of the work deals with the topography and morphyology of the central nervous system as seen with the naked eye, and the second part, which is the microscopic section, concerns itself with a functional viewpoint.

Throughout this volume the purpose of making the work one of practical usefulness to the student and the practitioner is paramount. The illustrations are extensive and well executed, and this book will find a definite place on the physician's bookshelf.

A PRIMER ON THE PREVENTION OF DEFORMITY IN CHILDHOOD. By Richard Beverly Raney, B.A., M.D., in Collaboration with Alfred Rives Shands, Jr., B.A., M.D., Published and Distributed by National Society for Crippled Children in the United States of America, Inc., Elyria, Ohio. Price $1.00.

In this little handbook all the affections of childhood prone to cause deformity are listed, describes briefly, and means of deformity prevention given.

Then, the various deformities are discussed and dealt with in divisions according to anatomy and

(Continued on page 36)



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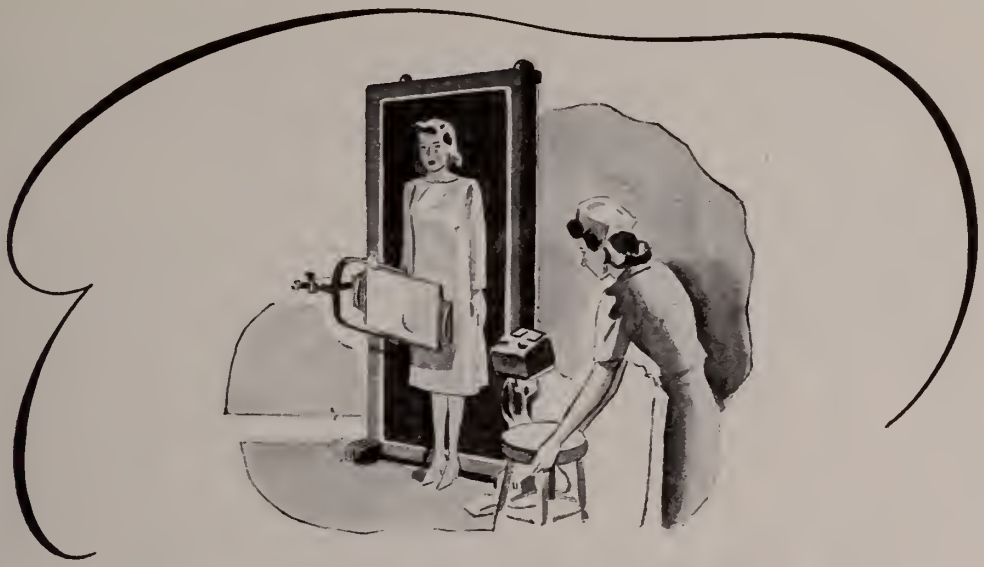
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BOOK REVIEWS (Continued)

subdivisions according to disease process.

The instruction given is written up in the simplest possible manner and a complete glossary of terminology is included, so that this handbook can be used by other than medical men who might need instruction to assist them with children. Physicians might very easily use this as a manuel in instructing parents of crippled youngsters so they could understand the "why" of various corrective measures.

THE ESSENTIALS OF APPLIED MEDICAL LABORATORY TECHNIC. Details of How to Build and Conduct an Office or Small Hospital Laboratory at Small Cost. By J. M. Feder, M.D.; BLOOD AND PLASMA TRANSFUSION By John Elliott, Sc.D. Charlotte Medical Press, Charlotte, N. C.

This book of 241 pages is a unique volume on laboratory procedures. It should prove to be very valuable to the physician who is personally training an office assistant in the simple laboratory procedures. The presentations have been so simplified by the step-by-step technique that the many routine tests can be carried out in a satisfactory manner by the student or novice technician, after fundamental instructions have been given by the Doctor.

As the title page states, it gives the details on how to build and conduct an office or small hospital laboratory at small cost. This section should, with its detailed information in regard to essential laboratory equipment, its purchase, care and extemporization, aid a physician, small hospital or small clinic to maintain an efficient laboratory at a minimum cost. This exceedingly well written section gives information about various laboratory apparatuses and reagents, also illustrations of their construction or where they may be obtained. It continues with the care and use of the microscope and a discussion of laboratory records.

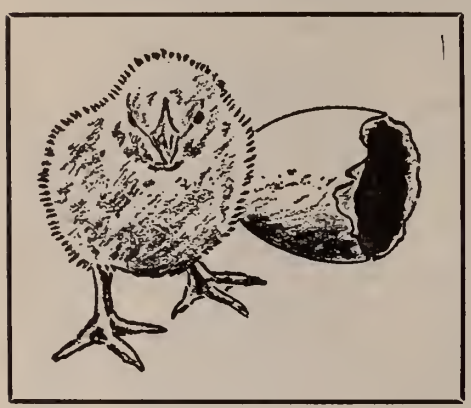
The chapter on hematology give full directions on how to make the various blood counts, blood smears, and blood stains. Many instructive illustrations are included in this chapter. Blood matching for transfusions is explained and illustrated. Such blood dyscrasias as Leukemia, Pernicious Anemia, and Sickle-cell Anemia are discussed.

"The Problem of Blood Transfusion," a full chapter by Dr. John Elliott, gives a detailed outline on transfusions and the preparation and administration of plasma.

Blood culture technique, examination of urine, examination of sputum, tests for syphilis, and urine tests for pregnancy are given in full detail. Gastric content analysis and gall bladder drainage are thoroughly discussed and illustrated.

The chapters on blood chemical analysis technique,

(Continued on page 38)



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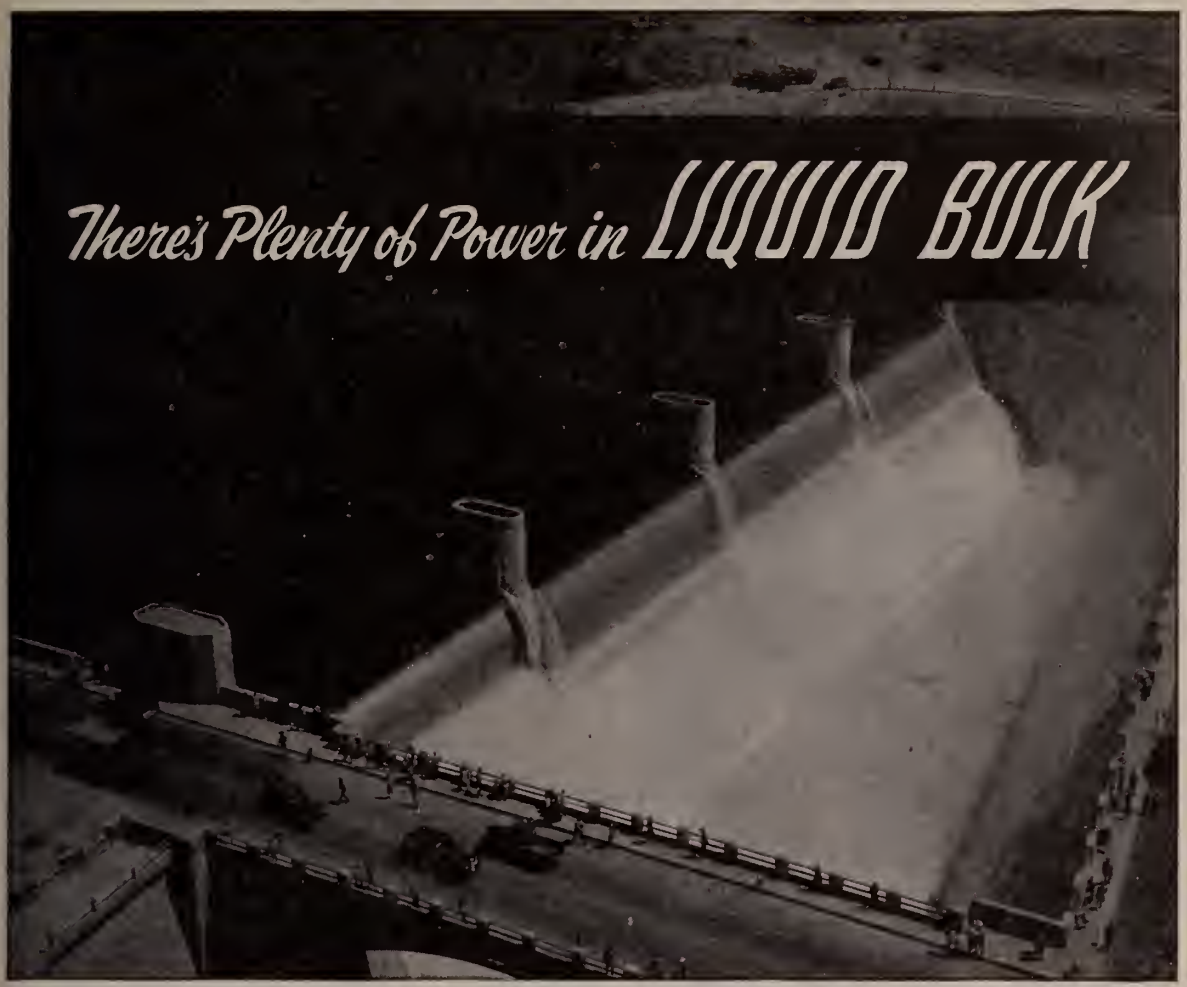
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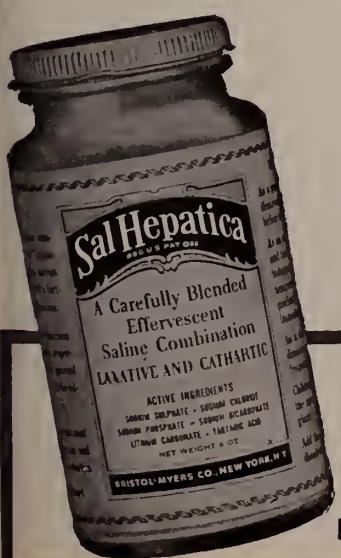
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BOOK REVIEWS (Continued)

practical bacteriological methods, spinal fluid examinations, examination of feces, basal metabolism and clinical examination of milk, outline the respective techniques clearly and concisely. Technical allergy, clinical toxicology, and vaccines are well discussed.

In the appendix of Dr. Feder's book we find the technique for determining prothrombin time, instructions for rapid diagnosis of Tuberculosis in 10-12 days by the Guinea-pig inoculation, instructions for cleaning laboratory glassware, and a great deal of other useful information.

This book is, in the reviewer's opinion, a very worthwhile manual for the novice laboratory assistant, and, one which would be most helpful. Congratulations to Dr. Feder for having compiled in this one simple volume the essential laboratory procedures used in the physician's office, small clinic, or small hospital, in step-by-step manner readily understandable. Also, congratulations to Dr. Elliott for the valuable chapter on blood and plasma transfusions.

SYNOPSIS OF ALLERGY. By Harry L. Alexander, A.B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of The Journal of Allergy. The C. V. Mosby Company, St. Louis. Price $3.00.

Among the more recent developments in Medicine are the considerations of allergy. For some time the principal considerations in allergy were relative to asthma, hay fever and vaso-motor rhinitis. Later urticaria, eczema and various gastro-intestinal disorders were given more consideration. This small book is one which can easily be carried about and consulted when the physician has time for such a study, or when the information is urgently needed at the moment.

Following the short chapter giving historical data concerning the origin and development of this branch of medicine, the author devotes considerable space to the discussion of Atopy stating that hay fever is perhaps the only disorder which is solely atopic, or develops as the result of contact with a nonbacterial substance of tissues specifically sensitized to it.

Hypersensitivities and their development are well outlined in the book, then a consideration of the more common atopen substances which produce most skin reactions. The method of approach in the determination that the many socalled "allergic reactions" are actually of that type, is well detailed, beginning with a careful history taking, the several types of testing, blood examinations, examinations of secreta, then the proper therapeutic measures to protect against the offending atopen, hyposensitization and drug therapy.

Bronchial asthma, hay fever, allergic types of headache, allergic dermatoses, physical allergy, drug and serum allergy, are given the proper careful consideration in the book.

(Continued on page 40)

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BOOK REVIEWS (Continued)

Much information especially for the student and physician in general practice is contained in this small volume and should be of especial interest to many.

SYNOPSIS OF GENITOURINARY DISEASES. By Austin I. Dodson, M.D., F.A.C.S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. The C. V. Mosby Company, St. Louis, Price $3.50.

This is the third edition of a popular treatis on this important subject. The book was primarily intended for the student of medicine and the busy practitioner, to give the essentials of this subject, without devoting much time for a discussion of technique in the various procedures along diagnostic and therapeutic lines.

With the more recent important developments in chemotherapy, many of which have changed the former opinions on treatment of several genitourinary disturbances, the third edition has included these along with the recommendations of the author for their use.

The book is well illustrated and although consisting of only about 300 pages, much valuable information will be found in the volume, which is heartily recommended for the purposes which led to its development.

SYNOPSIS OF THE PREPARATION AND AFTERCARE OF SURGICAL PATIENTS. By Hugh C. Ilgenfritz, A.B., M.D., Instructor in Surgery, Louisiana State University School of Medicine; Visiting Surgeon, Charity Hospital of Louisiana at New Orleans, and Rawley M. Penick, Jr., Ph.B., M.D., F.A.C.S., Professor of Clinical Surgery, Louisiana State University School of Medicine; Visiting Surgeon, Charity Hospital of Louisiana at New Orleans. Foreword by Urban Maes, M.D., D.Sc., F.A.C.S. The C. V. Mosby Company, St. Louis, Price $5.00.

The book is intended to be a practical guide for the care of surgical patients during their hospital stay. It was intended both for the student and interne as well as the surgical practitioner. A careful consideration is given to the fluid and electrolyte balance, and the indications for replacement therapy.

The methods and technique for the administration of fluids, per rectum, parentally or intravenously, are given in clear detail. Consideration of shock, its recognition and treatment are outlined carefully.

The subject of transfusion, with its indications, blood grouping and cross matching, and methods are carefully described. Likewise the modern use of blood plasma is also mentioned, along with the development of blood banks in hospitals to make a supply available for immediate use in cases of emergency.

A considerable amount of space is devoted to the aftercare of surgical patients and especially of complications which occasionally may arise. References are made to the use of the "Sulfa" groups in surgical complications although the book was written at a time when several of the newer sulfonamides were being investigated clinically and their proper evaluation had not been definitely decided.

The book is well written and the subjects discussed in such a way that the volume should be popular both for internes and surgical residents as well as for the surgeon who desires a quick reference work on the subject.

Books Received

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

SCIENCE AND SANITY. An Introduction to Non-Aristotelian Systems and General Semantics. By Alfred Korzybski, Director, Institute of General Semantics. The International Non-Aristotelian Library Publishing Company. The Sciene Press Printing Company Distributors, Lancaster, Pa. Price $6.00.

MEDICAL CLINICS OF NORTH AMERICA. Chicago Number. Volume 26. Number 1. January, 1942. W. B. Saunders Company, Philadelphia. Symposium on Treatment of Common Skin Diseases.

DIABETES MELLITIS. By Zolton T. Wirtschafter, M.D., Clinician in Charge, Clinic for Diabetes, Department of Medicine, Mount Sinai Hospital, Cleveland; Visiting Physician, Department of Medicine, Cleveland City Hospital; Clinical Instructor in Medicine, School of Medicine, Western Reserve University, Cleveland, and By Morton Korenberg, M.D., Former Fellow, May Institute of Medical Research, The Jewish Hospital, Cincinnati; Medical Resident, Jewish General Hos-

(Continued on page 42)



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BOOKS (Continued)

pital, Montreal. The Williams & Wilkins Company, Baltimore. Price $2.50.

Acute Alcoholic Intoxication. A Critical Review. By Henry W. Newman, M.D., Stanford University Press, Stanford University, California. Price $2.50.

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URGES CAUTION IN CONSIDERING USE OF VITAMINS FOR GRAY HAIR

The Experimental Evidence Is Conflicting And Much More Research Is Required, Journal of the A. M. A. Says

The need for caution in approaching the problem of a relationship between the intake of vitamins and the graying of hair is pointed out in *The Journal of the American Medical Association* for January 24. In an editorial headed "Vitamins for Gray Hair," *The Journal* says that although recent reports in the press concerning the restoration of the color of the hair by the administration of vitamins have largely centered around the supposed virtues of para-aminobenzoic acid, a factor of the vitamin B complex, the evidence in this respect is far more convincing for pantothenic acid, another component of the B complex. The editorial says:

"'My hair is gray but not with years, nor turned it white in a single night.' Thus spoke the poet. The phenomenon of sudden or rapid graying of the hair under the stress of fear, anxiety or other deeply disturbing nervous effects is well known. The gradual graying of the hair is also interesting. Many a worker finds difficulty in securing employment because of premature grayness of the hair. The whole process has been a mystery to medical science for many years.

"An interesting account by Ales Hrdlicka in his book 'The Old Americans' discusses the case of Major A. W. Greely, arctic explorer, who in 1884, toward the end of an exceedingly difficult trip of arctic exploration, had his hair turn completely white. On his return to civilization the whiteness began to disappear gradually and to return to a nearly normal condition. Writing in 1922, General Greely said 'When rescued at Cape Sabine in 1884 my hair was entirely white, due probably to the continuous condition of semistarvation from which I suffered for over nine months. Within a year my hair darkened considerably, though it never returned entirely to its original coloring.'

"This item, written more than fifteen years ago, is strangely apropos in these days when attention is being turned more and more to the relationship of the diet to the graying of hair.

"Recent reports in newspapers and magazines assert that the color of the hair can be restored by the administration of vitamins. Most of these reports have centered around the supposed virtures of para-amino-benzoic acid, said to be especially effective in restoring color to the gray hair of persons whose hair has been red. Para-aminobenzoic acid has been isolated from yeast, definitely identified, and is considered to be the substance in yeast extracts which reverses the bacteriostatic effect of sulfanilamide. In the laboratory it has been shown to be a bacterial growth factor. Ansbacher has claimed that it is a growth promoting factor for the chick and a factor which is curative of gray hair which develops in black rats when maintained on certain types of synthetic diets. Sieve has fed doses of 100 mg. twice daily to adults and has reported that after about two months there was darkening of the hair in all instances. Confirmatory reports by qualified investigators have not yet appeared. Because of the publicity that has been given to the work, many patients have been led to request treatment by their physicians.

"A diversity of opinion still prevails about the relation between diet and graying of hair in animals. Most investigators have been unable to verify Ansbacher's observation that para-aminobenzoic acid is related in any way with the phenomenon of graying of hair in animals. The recent report of Unna, Richards and Sampson of the Merck Institute states that black rats which are fed a synthetic diet deficient in pantothenic acid become gray in about four to six weeks. Pantothenic acid at a level of 100 micrograms a day will prevent or cure this condition. Para-aminobenzoic acid in these experiments was entirely ineffective.

"Elvehjem and his collaborators substantiated this work in its entirety. Williams found that pantothenic acid was without effect on the graying of hair. György and Poling believe that both pantothenic acid and biotin, another less well known member of the vitamin B complex, are necessary to prevent or cure nutritional achromachia — loss of hair color — in animals. Their lack of success has been attributed to the fact that the supplementary feeding of pantothenic acid used was too small.

"Over ten years ago it was observed by a number of biochemists interested in nutritional anemia that black haired rats became gray on a milk diet. When the anemia was developed on

(Continued on page 46)

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VITAMINS FOR GRAY HAIR (Cont.)

this diet it was cured by administration of iron and copper and the color of the hair likewise was restored to normal. Agnes Fay Morgan and others showed in 1938 that a similar condition of gray hair could be produced in animals by a diet that did not contain all factors of the vitamin B complex. Thus came the conviction that vitamins may be concerned with this phenomenon. Even yet the experimental evidence is conflicting.

"Is para-aminobenzoic acid really concerned with the maintenance of normal dark hair color in man? If gray hair is darkened by administration of relatively large amounts of this substance, the effect may be due simply to the excretion into the hair of some paraphenylenediamine-like compound which acts like a dye. Not all people whose hair has turned gray are necessarily suffering from a demonstrable vitamin deficiency. Before further experimental work is done on human beings it would be well to exhaust the possibilities of animal experimentation to ascertain the metabolic function (life-producing processes of the body) of these substances that are present in yeast. Further, in view of the paucity of information about the functions of para-aminobenzoic acid, it would be highly desirable to know something about the metabolic history of this chemical in the body before relatively large doses are administered to patients over comparatively long periods of time. Finally, the evidence in behalf of some definite relationship between intake of vitamins and graying of hair is far more convincing for pantothenic acid than for para-aminobenzoic acid."

Tuberculosis occupies one of the first places in the disorganization of family life, both socially and economically. It breaks up homes, separates families, destroys husband-wife and parent-child relationships; and it renders many of its victims incapable of resuming their places in society. Economically the cost of this disease to the community is tremendous. It costs a community from $2,000 to $5,000 to care for each case of diagnosed tuberculosis, depending upon the stage of advancement. It has its highest incidence during the most productive years of life, and the financial loss to the patient and to the country as a whole amounts to millions of dollars annually. From an epidemiological standpoint, the disease has the greatest incidence of any disease, with the possible exception of gonorrhea and syphilis. Grace M. Longhurst, R.N., Amer. Jour. of Nursing, Jan., 1942.

REPORT FULL RECOVERY OF MAN AFTER HEART STOPPED 20 MINUTES

Authors Say This Shows The Time Interval Of Such Cases With A Normal Recovery Is Longer Than Formerly Appreciated

Reporting the complete recovery of a man whose heart had stopped beating for twenty minutes during an operation, Herbert D. Adams, M.D., and Leo V. Hand, M.D., Boston, point out in *The Journal of the American Medical Association* for January 10 that "this case demonstrates that the time interval of cardiac (heart) arrest compatible with normal recovery is much longer than formerly appreciated."

Certain principles of prevention and treatment of this condition are enumerated by the two men. They say that normal recovery is dependent on adequate saturation of tissue with oxygen, especially brain tissue. This is accomplished by immediate and simultaneous artificial circulation of the blood, by means of massage of the heart, and artificial respiration.

"Efficient artificial circulation," they say, "is dependent on more than simple cardiac massage.

"The measures instituted must approach as closely as possible the normal physiologic cardio-respiratory sequence.

"Synchronized artificial respiration associated with artificial cardiac diastole (expansion of the heart) followed by artificial cardiac systole (contraction) more nearly approaches this normal sequence."

By this the authors mean that the artificial respiration and the massage of the heart must be coordinated so as to duplicate as closely as

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possible the normal relationship between breathing and the action of the heart.

In the introduction to their paper the two men point out that "Every surgical team will at times be called on to face the serious responsibility of sudden cardiac arrest in the operating room. Such a catastrophe may develop at any point in the procedure — during preliminary preparation, during induction of anesthesia, during the operation or during certain essential postoperative procedures.

"The exact physiologic mechanisms involved may be extremely difficult to analyze either at the time or later, after deliberate and full consideration. Prompt, adequate and properly selected methods of stimulating the return of cardiac function, maintaining adequate cerebral (brain) oxygenation, are essential in order to save the lives of these patients. However, the exact choice of these procedures and the possibility of their application under the existing circumstances are often difficult. As a result, routine measures and cardiants (heart stimulants) are applied, frequently without success. Primarily because of this uncertainty in management and results, we have been prompted to report the following case and its discussion, because it represents certain unusual aspects of this problem and has changed some of our fundamental concepts regarding cardiac resuscitation."

The patient was undergoing an operation on the left lung when his heart stopped beating, following which heart stimulants were injected, and, as the heart was exposed artificial circulation and respiration were instituted immediately. Oxygen was supplied to the lungs by rhythmic

(Continued on page 48)

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HEART STOPPED (Continued)

pressure on the rebreathing bag used in administering anesthesia.

Within a few seconds after the heart resumed spontaneous rhythmic contractions spontaneous breathing started, progressing from rapid shallow respirations to rapid exaggerated respirations. Twenty-five minutes after the heart ceased beating the patient's color, which had been somewhat of a violet hue, became a livid pink and the breathing gradually quieted. For the remainder of the operation only oxygen was administered. The patient left the hospital in good condition sixty days after operation.

The authors explain that "the rationale of treatment in this instance was governed more by urgency and expediency than by any prepared plan or organized regimen for treatment."

Artificial respiration can be maintained, they advise, by means of the apparatus used to administer the anesthesia. As for the maintenance of the circulation of the blood by rhythmic compression of the heart by hand in cases where neither the chest nor abdomen are open, the two men say that a rapid exposure of the heart can be accomplished by an incision in the left chest. They also say that the influence of gravity on circulation of the blood in the brain should be considered and advise that the patient's body should be tilted a few degrees, with the head down.

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The case of a child with generalized peritonitis (inflammation of the membrane lining of the abdominal cavity) and acute appendicitis in whom an operation was inadvisable, whose recovery is attributed to injections of sodium sulfathiazole into the vein and of sulfapyridine directly into the abdominal cavity, is reported in *The Journal of the American Medical Association* for January 24 by Julius Gottesman, M.D., and Harold Goldberg, M.D., New York.

The search for sources of infection in tuberculosis is an important part of tuberculosis case finding and may be almost as productive of results as the search for cases among contacts. G. E. Harmon, M.D. and Bruce H. Douglas, M.D., Amer. Rev. of Tuber., Dec., 1941.



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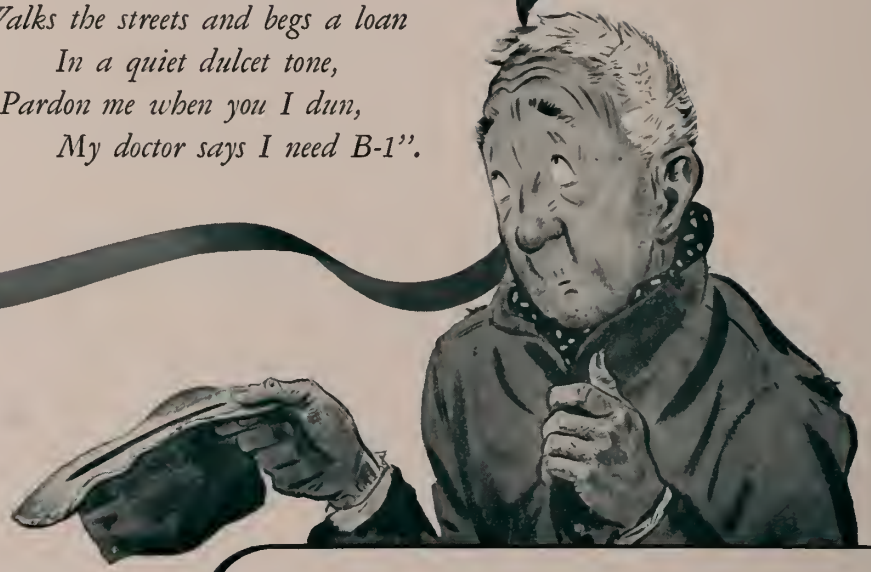
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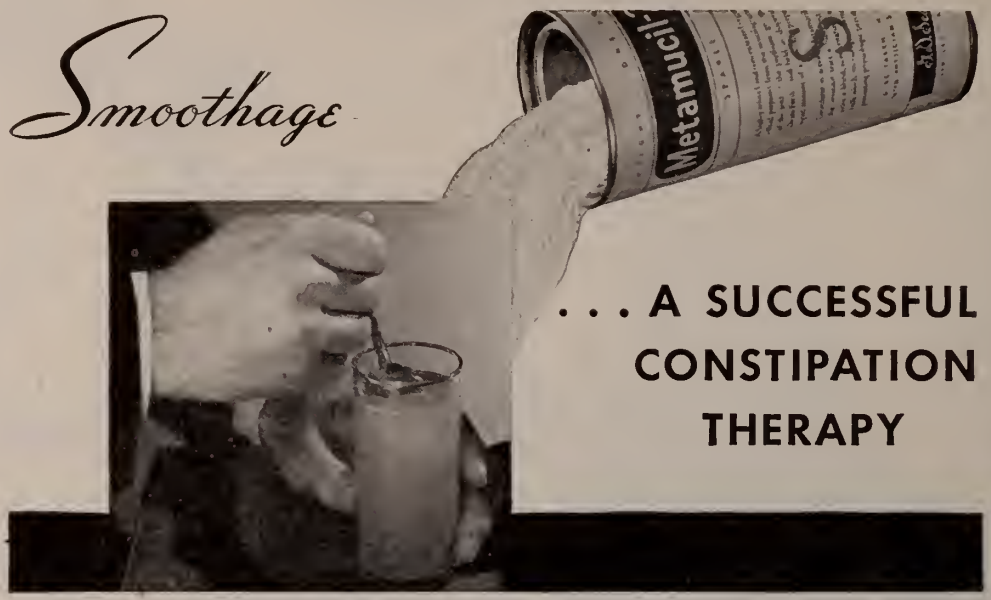
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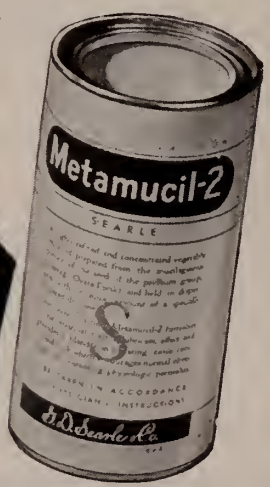
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1937. Univ. Illinois Agr. Expt. Sta. and Extension Service in Agr. and Home Econ. Circular 472.
1929. Univ. Maryland Agr. Expt. Sta. Bul. 318.

ACCEPTED AMERICAN MEDICAL ASSN.

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FERROUS iron has been shown in numerous clinical reports to be effective in smaller dosage than other forms of iron and to have fewer undesirable side-effects. Included in the number of hematinics available under the Squibb label are three which supply iron in ferrous form. To meet the needs of individual patients and preferences of physicians one of these products supplies iron alone; another, iron and B_1; a third, iron, B_1, and liver.

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CAPSULES FERROUS SULFATE WITH B_1 SQUIBB . . . For prevention and treatment of secondary anemia especially in patients with anorexia due to vitamin B_1 deficiency. Each capsule contains 3 grains of ferrous sulfate exsiccated and 1 mg. of thiamine hydrochloride (333 U. S. P. XI units of vitamin B_1). Supplied in bottles of 100 and 1000 capsules.

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and
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"ORAL INGESTION of mineral oil in daily doses was associated with lowered prothrombin values in 70 per cent of the patients, while intermittent use of the oil resulted in hypoprothrombinemia in 33 per cent of the cases."

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(1) C. T. Javert and C. Macri, Prothrombin Concentration and Mineral Oil, Am. J. Obst. & Gyn. 42:409 (Sept.) 1941.

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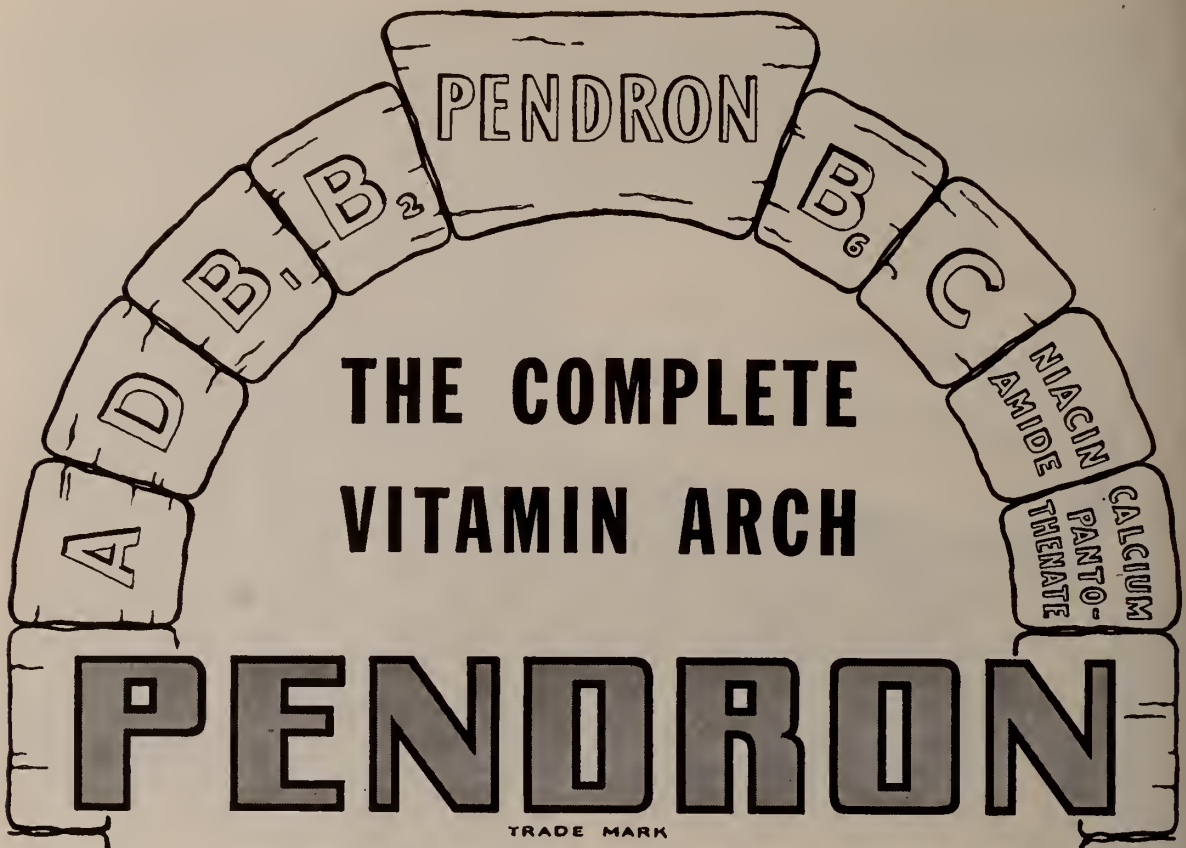
In mild cases, 5 to 10 mg of Neo-Hombreol (testosterone propionate 'Roche-Organon') by intramuscular injection 2 or 3 times a week, and in severe cases, 10 to 25 mg Neo-Hombreol every second day affords satisfactory control of the symptoms. Maintenance therapy should be continued for from 3 to 12 months: 5 to 10 mg of Neo-Hombreol by intramuscular injection 2 to 3 times a week, 2 Neo-Hombreol (M) Dosules (methyl testosterone 'Roche-Organon') daily by cutaneous application or 2 to 5 oral Neo-Hombreol (M) tablets daily, suffice in most cases.

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'Roche-Organon'



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Vitamin B_2 (Riboflavin, Vitamin G) 800 S-B Units	2 milligrams
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Ciba Pharmaceutical Products, Inc. salutes the medical men of today in the armed forces of the United States as well as those in civilian forces responsible for health "behind the lines."

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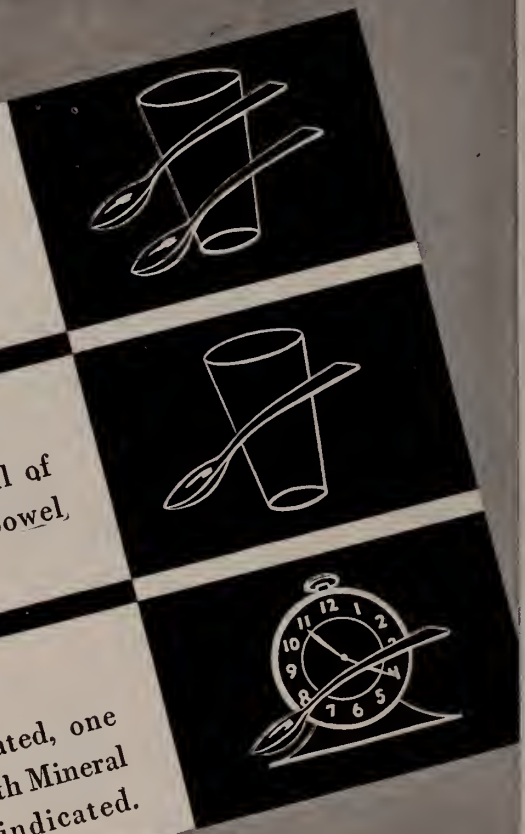
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At the onset... administer two tablespoonfuls of Kaomagma Plain, in a little water

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KAOMAGMA • Coats and protects the irritated mucosa, acting as a mild astringent. • Precipitates and coagulates bacterial suspensions. • Adsorbs and renders innocuous toxic and irritant substances in the intestines.

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Neoprontosil has been found to exhibit pronounced bacteriostatic potency in complications caused by the hemolytic streptococcus. Many cases of septic sore throat, otitis media, sinusitis and a number of other intercurrent conditions have yielded promptly to this agent. The relatively good tolerance of Neoprontosil has proved particularly gratifying.

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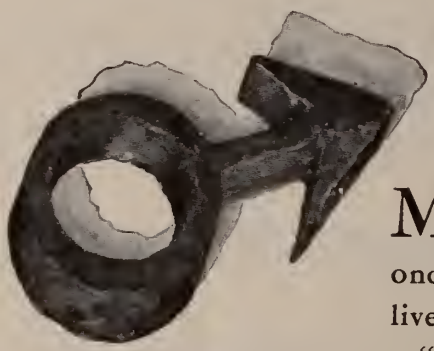
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An important plus in combating iron-deficient anemias . . .



Alchemist's Symbol for Iron . . . Iron in olden times was symbolized by the spear and shield of Mars, God of War.

VI-FERRIN

Lederle

MANY CLINICIANS have obtained better response with iron therapy in secondary anemias when Vitamin B and liver have been included.

"Vi-Ferrin *Lederle*" is offered for the treatment of iron-deficient anemias of all types (except infantile anemias) where the ingestion of iron is indicated.

It is also indicated in the prevention of the iron-deficient anemias when they are likely to be due to improper diet, pregnancy, lactation or hemorrhage.



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Each "Vi-Ferrin *Lederle*" Capsule contains:

- Dried ferrous sulfate—0.20 Gm. (3 grains) equivalent to 66 mg. metallic iron.
- Thiamine Hydrochloride (Vitamin B_1)—0.25 mg. (83 Int. Units)
- Liver concentrate—0.5 Gm., containing Riboflavin (Vitamin B_2)—0.13 mg.

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THE "CENTURY" has ample speed too. Fractional second radiographs of various parts of the body and it's ideal for fluoroscopy as well.



CERTAINLY SOUNDS GOOD. Where can I get some additional facts on this new x-ray equipment?

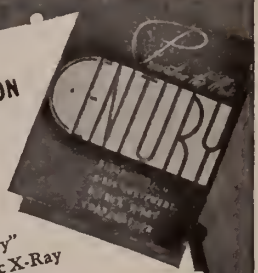
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infants' diets

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KNOX GELATINE (U.S.P.)	FACTORY-FLAVORED GELATINE DESSERTS
All gelatine.	Only contain 10% to 12% gelatine.
Protein 85% to 87%.	Protein 10% to 12%.
pH about 6.0.	pH highly variable.
Absolutely no sugar.	About 85% sugar average.
No flavoring. No coloring. Odorless. Tasteless. Blends well with practically any food, including milk.	Contain flavoring, acid and coloring matter.
Practical for many diets including: diabetic, peptic ulcer, convalescent, tubercular, colitic, aged, etc.	Contraindicated in diabetic, peptic ulcer and other diets.



KNOX GELATINE
(U. S. P.)
is plain, unflavored gelatine—
All protein, no sugar

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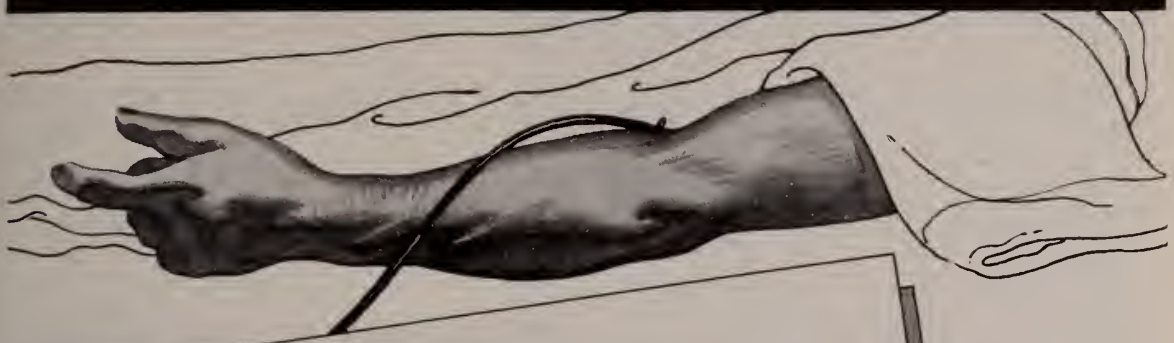
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Hematinic Plastules provide iron in the *ferrous* state quickly available for conversion into hemoglobin. They are easy to take and well tolerated. Each Plastule contains dried ferrous sulphate U.S.P.X. 5 gr. and yeast concentrate .75 gr., supplied in bottles of 50, 100 and special hospital size of 1,000. Also available with Liver Extract.

' ' '

Ferrous Iron Sealed from the Air but not from the Patient

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†Fowler and Barer: "Rate of Hemoglobin Regeneration in Blood Donors." J.A.M.A., 118:421:1942.

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28% LESS NICOTINE IN THE SMOKE—BUT NO REDUCTION IN SMOKING PLEASURE

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**J.A.M.A., 93:1110—October 12, 1929*
Brückner, H—Die Biochemie des Tabaks, 1936

***The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941*

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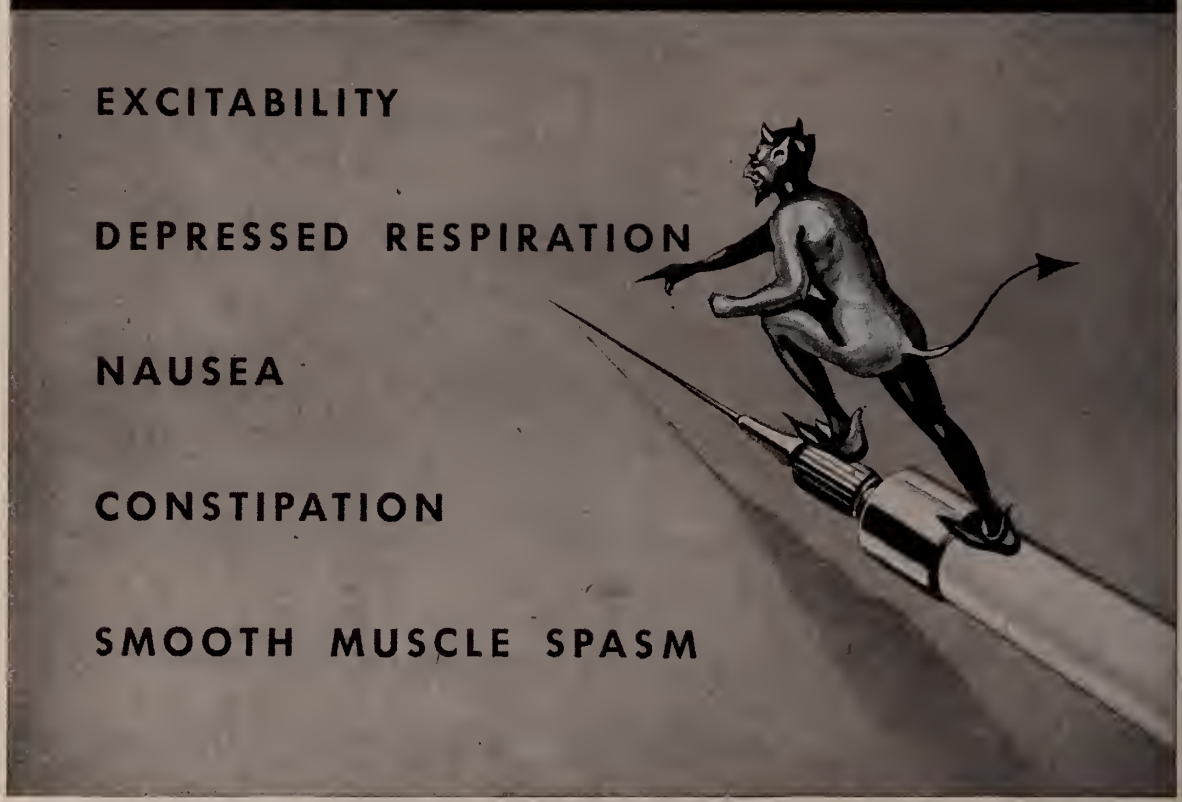
Caplets are capsule shaped, compressed and coated tablets. Their contents cannot dry and shrink, absorb water, or oxidize.

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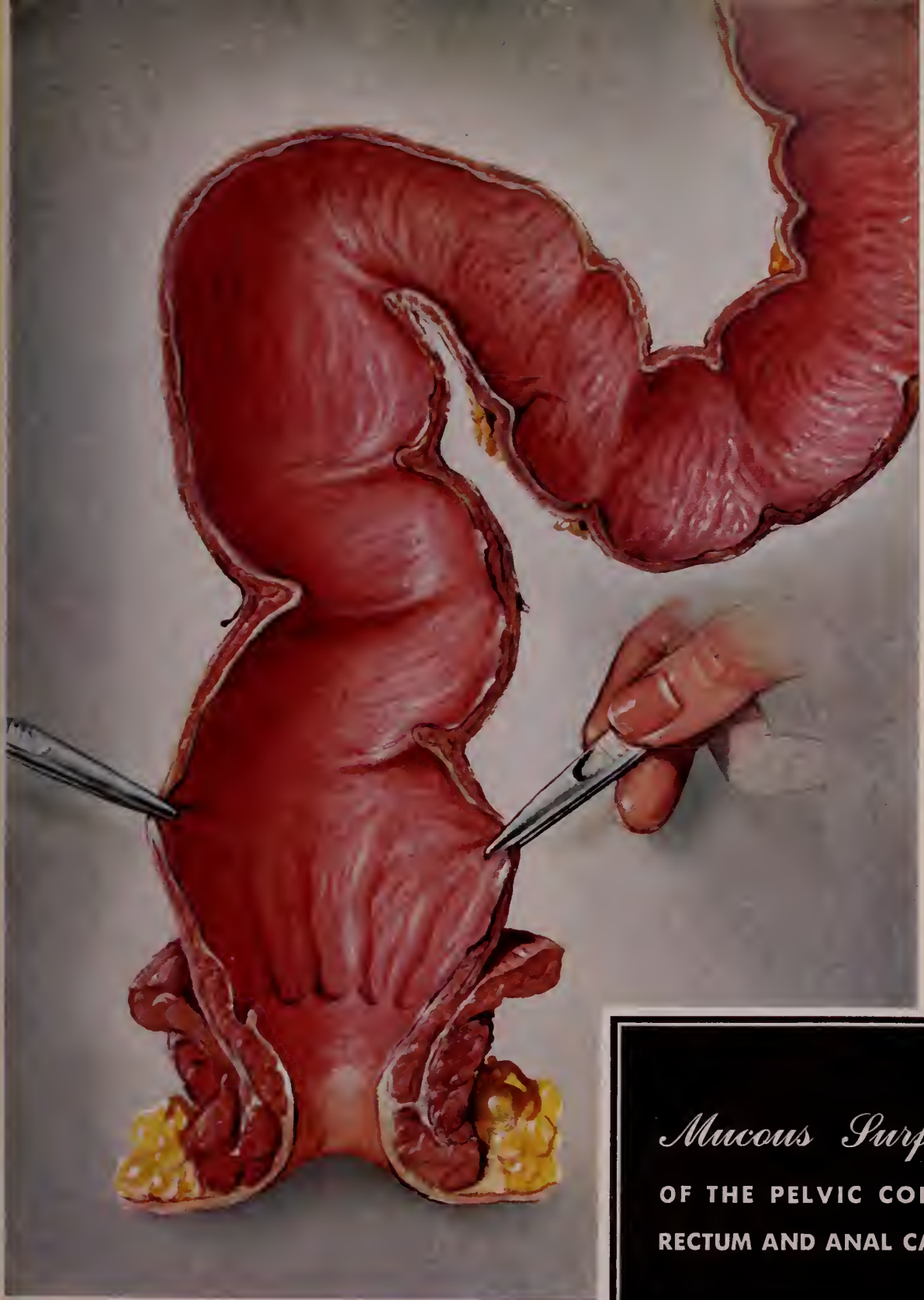
DIMINISH ADVERSE BY-EFFECTS
FROM YOUR OPIATE NEEDLE



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Use PANTOPON 'Roche'



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OF THE PELVIC COLON, RECTUM AND ANAL CANAL

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The mucous membrane of the bowel performs an important absorptive function, but it is soft and readily subject to irritation. At times the stools tend to become dry and hard as when there has been delay in bowel evacuation. The resultant inspissated stool masses may lead to irritation of the bowel mucosa. In such cases the management of constipation seems to indicate a gentle softening of the stool with an agent such as Petrogalar. By providing bland, unabsorbable fluid, Petrogalar helps keep the feces soft, moist and easy to evacuate. It affords an efficient treatment to help the patient reestablish and maintain a normal Habit Time for bowel movement.

Petrogalar is exceptionally palatable. It may be taken directly from the spoon or in liquids as the patient prefers.

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Helps Establish "Habit Time!"

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**Reg. U. S. Pat. Off. Petrogalar is an aqueous suspension of pure mineral oil each 100 cc. of which contains 65 cc. pure mineral oil suspended in an aqueous jelly containing agar and acacia.*

Petrogalar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois

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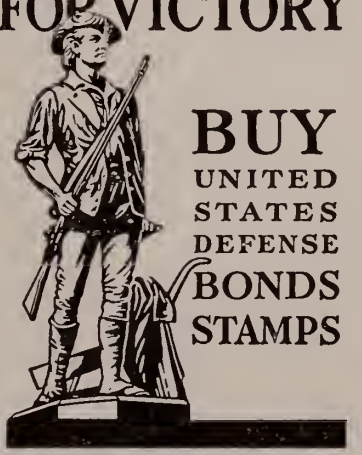
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PRINCIPAL OFFICES AND LABORATORIES, INDIANAPOLIS, INDIANA, U. S. A.

The Illinois Medical Journal

April, 1942

VOL. 81, NO. 4

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Philip H. Kreuscher, Harry Culver.

Editorials

THE 1942 ANNUAL MEETING

The 1942 annual meeting of the Illinois State Medical Society will be held in Springfield on May 19, 20, 21, and the preliminary program for the various sections, the general and joint sessions, along with other information relative to the meeting, will be found in this issue of the Journal.

Owing to the fact that the meetings have grown each year it has been quite difficult to make the necessary arrangements for this meeting, and it is necessary to use at least two buildings which are close together, for the various sessions. The technical exhibits and all general meetings will be held in the Knights of Columbus Building, while the scientific exhibits and part of the section meetings will be scheduled for the Elks Club.

There has been an increasing tendency in recent years to have more general and joint sessions at the annual meetings, and this will be continued this year, as will be noted in the preliminary program.

Arrangements for the 1942 meeting have been rather difficult to make as several members who have been accepted to participate in the programs have been called to service. Likewise several of those responsible for arranging the individual section programs are now in some form of military service, and it has been necessary to make replacements in order that the program might be completed.

There will be a number of invited guests on the program this year, as will be noted. Papers will be presented on subjects which are most timely, having to do with military medicine, civilian defense, and other equally important subjects. The official program will be published in the May Illinois Medical Journal, and other essential information will be added at that time.

Physicians planning to attend the meeting in Springfield should make their hotel reservations early so there will be no last minute disappointments. The hotels, the Springfield Association of Commerce and many other local groups are cooperating with the Committee on Arrangements and the Host Society, in the common endeavor to do all that is possible to insure a most successful annual meeting for 1942.

PHYSICIANS FOR THE ARMED FORCES

The Procurement and Assignment Service for Physicians, Dentists and Veterinarians has assumed responsibility for procuring the necessary members of these professions for the Army, Navy, U. S. Public Health Service and other Federal Services now requiring medical personnel. Thousands of physicians are now in all branches of service and many additional thousands are being needed constantly.

It is the desire of the Procurement and Assignment Service to create a pool of qualified physicians who are not only qualified to render service in the various governmental fields but who can be safely dislocated from their private

practice without inflicting any unusual hardship on their respective communities. Then when any Governmental agency such as the Army, Navy, Public Health Service, etc., desires a certain number of qualified physicians for special service on short notice, it will be easy to supply them.

The function of the Procurement and Assignment Service at State and County levels is to determine the availability of those physicians submitted to them for clearance. Primarily the object is not to evade military service but to determine those who are available for the various types of service for which there is an urgent demand.

In determining availability for service it is quite important that careful consideration be given to the following:

1. Can a young man in practice be replaced temporarily by another physician beyond the draft age for the emergency?

2. In the event that a physician is engaged in industrial practice, or a member of a clinic group, would it be possible for others to assume his responsibilities while he is in service?

3. Where the physician in question is the only practitioner in a small community, consideration should be given to the availability of other physicians in the vicinity who might be able to serve the community during the absence of the resident.

A considerable amount of responsibility is placed in the hands of the State and County Committees which are urged to give careful consideration to each case referred to them for clearance and to be sure that the physician in question is available or non-available according to the principles which are mentioned above.

Copies of these clearance reports are sent to Washington as well as to the Corps Area Chairman. The final decision is made by the Procurement and Assignment Service officials in Washington.

Each County Committee should endeavor to get all possible information relative to physicians whose names are submitted to them for clearance so that the Procurement and Assign-

ILLINOIS STATE MEDICAL SOCIETY

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Original articles and membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

ment Service will have definite reasons for the recommendations which are made in each case.

Charles H. Phifer, M.D.
Chairman,
Procurement and Assignment Service
6th Corps Area
30 North Michigan Avenue
Chicago

PREPARATION OF PAPERS FOR PUBLICATION

In our efforts to improve the Journal we are faced with problems for the solution of which we ask the contributors' aid. Due to rising prices in general and to the increased cost of paper in particular, Journal costs are increasing. Space for scientific articles has been somewhat reduced by the creation of new departments made necessary by the war. For these and other reasons, we are submitting a list of suggestions to authors. If these are carefully followed, papers will decrease in length and increase in effectiveness.

Scientific articles should not exceed ten Journal pages and will be more carefully read if they are shorter than that.

Papers must be typewritten on one side only of white paper 8½ x 11 inches, double spaced throughout. The margins should be 1½ inches top and left side, 1 inch bottom and right side.

The pages, including tables, legends and bibliography, should be numbered consecutively.

The title should be brief and typed in capital letters. Under the title should appear the name of the author and the city in which he lives. His street address should appear at the end of the article.

There should appear in the text reference numbers typed above and to the right of the word to which there is a reference. The bibliography should be collected at the end of the article with the same reference numbers. The list should include the following items:

Books — author's surname followed by initials; title of book; edition; location and name of publisher; year of publication; volume; and page number. Thus, Osler, W.: Modern Medicine, ed. 3, Philadelphia, Lea & Febiger, 1927, vol. 5, p. 57.

Periodicals — author's surname followed by initials; name of periodical, volume, page, month (day if necessary,) year of publication. Thus, Leahy, Leon J.: New York State J. Med. 40: 347 (March 1) 1940.

Spelling should be correct. When in doubt consult a standard dictionary. The Journal has not adopted the short form of through, thorough, etc.

Phony locutions. "He operated ten cases." The surgeon operates in a case but on a patient. The patient is not the case. The patient dies or recovers, the case terminates fatally or ends in recovery. "Cases in whom" should be "cases in which." "Patient in whom" is correct.

Many physicians have envied Sir William Osler his apparently easy command of English writing. In the Osler Library is a collection of some of his manuscripts showing the various stages of preparation. First there are notes of various kinds, then a rough outline in longhand, next a typewritten copy with interlineations, transpositions and deletions, a second typewritten copy also showing much modification, and finally a third typewritten copy, probably used by the printer. Even this third copy bears minor corrections.

Illustrations. All cuts required for illustrations are furnished at the author's expense. For detailed instructions regarding photographs, drawings cost, etc., apply direct to the editor.

The Editor and the Editorial Board.

REPORT OF EDUCATIONAL COMMITTEE

December, 1941, and January, February, 1942

The office of the Educational Committee has not only served as a clearing house between medicine and the public, but has also given very definite assistance during the last months to other Committees and officers of the Illinois State Medical Society. The following definite contribution might be mentioned.

Industrial Committee: Letters sent to a selected list of 80 doctors in the state inviting them to participate in programs on industrial medicine and surgery. A second follow-up letter was sent to about 40. The names and subjects submitted have been listed and will go with a letter from the Chairman of the Indus-

trial Committee to officers of county medical societies.

Scientific Exhibits Committee for Annual Meeting: 150 letters sent to prospective exhibitors with application blanks properly filled in.

Secretary: 27 Letters re Public Assistant Recipients mimeographed. 200 Copies of an article by Major Seeley mimeographed. 57 News releases concerning the National Conference on Medical Service.

President: 126 News releases concerning Procurement and Assignment meeting at Museum of Science and Industry. Stenographic service given.

Journal: Letters written, Proofs returned to authors, Journals sent to advertisers.

"LEAVE 'EM WHERE THEY LIE" Articles:

The Committee has received numerous requests from doctors for sets of these articles to be used in connection with First Aid and Civilian Defense training in their plants. One company asked for 125 copies to be used by men in its plant.

The *Daily Republican* of Belvidere for November 29th, carried the following editorial:

> "The Illinois Medical Society is doing a good work in its series of news releases emphasizing the slogan, 'Leave 'Em Where They Lie,' referring to victims of automobile accidents. If the general public will remember these facts and follow them at all times, the traffic toll will be reduced by a wide margin. The medical group is to be congratulated for its aid to the cause of greater safety."

The Texas State Medical Society has been thanked for allowing the Educational Committee to use these articles and many requests for use by city and medical societies in all sections of the country have been referred to Texas.

PACKAGE LIBRARIES:

At the present time the pubilc is extremely interested in material relating to nutrition and blood plasma and blood transfusions. Many package libraries have been prepared and sent not only to doctors but to laymen.

Package libraries also have been loaned on Mental Health, Child Health, Important Discoveries of 1941, Medical Education, Public Health, Maternal Welfare, Child Health, Nursing, Eye Conservation, Pneumonia, Sulfanilamide, Athletics and Health, Alcohol and Health, Leisure and Recreation, Common Cold, Health and Sanitation.

SPEAKERS BUREAU:

64 Doctors were scheduled to address lay audiences. In fact, the following organizations requested programs on health:

High School assemblies and vocational guidance groups
Women's Clubs
Business and Professional Women's Clubs
Lions
Parent Teacher Associations
Health Chairmen, Illinois Federation of Women's Clubs
Women's Auxiliaries
District Meetings, Illinois Federation of Women's Clubs
Mothers' Clubs
Y.W.C.A.s
Eastern Star Orders
Household Science groups
Home Bureaus.

Programs were arranged for groups in Chicago, Evanston, Brookfield, Winnetka, Western Springs, Crete, Sycamore, Chicago Heights, Tremont, Summit, Geneseo, Riverdale, Berwyn, Oak Forest, Franklin Park, Perry, Peru, Kewanee, Galesburg.

Subjects selected by these groups were interesting and varied:

Sex Hygiene	Vitamins
Heart Disease	Mental Health
New Trends in Medicine	Sanitation
Opportunities in Medicine	Nutrition
Allergy	Skin
Middle Age	Health School Child
Cancer	Medicine & Defense
Health of the Young Mother	Eye, Ear, Nose & Throat
First Aid in the Home	Abuses of Self Medication
Prevention of Tuberculosis Blood Banks	Colds
	Socialized Medicine

SCIENTIFIC SERVICE:

45 Scientific programs were arranged for 25 county medical societies as follows:

Bureau — Management of Prolonged Labor
Effingham — Lower Back Pain
Tazewell — Chronic Rheumatic Disease
Bond — Office Urology

Lee — Low Back Pain
Knox — Water Balance
Randolph — Healing of Wounds
Randolph — Meniere's Disease
Montgomery — Ankle Fractures
Champaign — Gall Bladder Disease
Fulton — Prevention of Blindness
Fulton — Cancer
Bureau — Obstetric Hemorrhage
St. Clair — Hernia
Union — Infections of the Hand
McDonough — What the General Practitioner Should Know About the Eyes
Jersey-Greene — Dermatology
Effingham — Acute Abdomen
Bureau — Injuries of the Nervous System
Lee — Gall Bladder Surgery
Will-Grundy — X-Ray in Diagnosis of Gallbladder & Liver Conditions
Will-Grundy — Rheumatic Heart Disease
DeKalb — Diseases of the Gall Bladder
Bureau — Obstetric Hemorrhage
Bureau — Toxemias of Pregnancy
McDonough — Aviation Medicine
Peoria — Backache and Sciatica
Vermilion — Sex Hormones
Perry — Medical Management Diseases of the Stomach
Perry — Surgical Management Diseases of the Stomach
Union — Fractures of the Pelvis
Will-Grundy — Bladder Tumors
Jersey-Greene — Disorders of the Gastrointestinal Tract
Knox — Varicosities
Knox — Pneumonia in Infancy
Marion — Nose & Throat Conditions
Will-Grundy — The Thyroid
LaSalle — Poliomyelitis, Medical Management
LaSalle — Orthopedic Management of Poliomyelitis
Henry — Sinus Disease
McLean — Pre-Eclamptic Toxemia
Henry — Empyema and Lung Abscess
Saline — Age of Speed Versus Age of Accidents
Will-Grundy — Peptic Ulcer

RADIO:

19 Programs were given over WJJD and WAAF with Mrs. S. C. Kehl assisting through the month of January over the latter station. Two highly interesting broadcasts were given on February 21st and February 28th when Doctors Frank L. Brown and F. O. Fredrickson talked on "The Medical Profession and the War" and Doctors F. P. Hammond, E. H. Ochsner and Captain Gorby spoke on "The Chicago Medical Society and the Chicago Crime Commission."

POST-GRADUATE EDUCATION:

At long last the Committee completed the assemblying and mimeographing of scientific papers presented at the Post-Graduate Conferences sponsored during the fall and winter of 1941. This material was bound and mailed to all doctors requesting copies.

A very unusual conference has been arranged for Belleville on April 9th by the Post-Graduate Committees of the Illinois and Missouri State Medical Societies. A copy of the program attached.

MISCELLANEOUS: *Parent Teacher Association*: The Secretary of the Educational Committee has been invited to serve on the Advisory Committee to the Summer Round-Up Committee of the Illinois Congress of Parents and Teachers.

The Committee assisted the Summer Round-Up Chairman with plans for an annual conference of chairmen which was held at the Stevens Hotel in January. The Committee furnished several hundred "Do You Know" articles on appropriate subjects for distribution at this meeting.

Letters have gone to officers of county medical societies explaining the purpose of the Summer Round-Up and stating that local groups will contact them for advice. Letters have also gone to all Summer Round-Up chairmen throughout the state advising them to contact the officers of the county medical societies before making plans for this activity in their communities.

Periodic Health Examination Blanks: Requests have come in from Public Health Nurses and Advisers of County Home Bureaus for the Periodic Health Examination Blanks.

PRESS SERVICE:

30,000 "Do You Know" articles sent to the lay list which includes health chairmen, farm and home advisers, nurses, schools, libraries, teachers, etc.

6 Stencils of 6 different "Do You Know" were furnished the Principal of the Trumbull School who had 1,000 copies of each run off so that each child in the school could take a copy home.

Articles were written on the following subjects:

Open Those Garage Doors
The Weather and You
Mumps
Looking Backward
Do Not Delay in Pneumonia
Prevalence of Measles
Colds
Speech Defects
Your Blood Count and What It Means
Heart Trouble
Avoid Permanent Blackouts
Tuberculosis Comes from Tuberculosis

3,276 Editorial Style articles released to newspapers, 208 Health columns to newspapers, 64 Special releases for Chicago Medical Society meeting.

PUBLICITY FOR COUNTY MEDICAL SOCIETY MEETINGS:

90 — Releases for Effingham County
54 — Releases for Lee
76 — Releases for Knox
13 — Releases for Randolph
91 — Releases for Bureau
131 — Releases for Bureau Maternal Welfare Meetings
36 — Releases for DeKalb
12 — Releases for North Shore Branch Chicago Med. Society
95 — Releases for LaSalle
27 — Releases for Perry
17 — Releases for Jersey-Greene
41 — Releases for Henry

AID TO COUNTY SOCIETIES:

318 — Notices for Effingham County
269 — Notices for Lee County
296 — Notices for Knox County
45 — Notices for Randolph
552 — Notices for Bureau
180 — Schedules for Maternal Welfare Programs for Bureau Co.
82 — Notices for DeKalb County
432 — Notices for LaSalle County
221 — Notices for Perry
45 — Notices for Jersey-Greene
207 — Notices for Henry County

CONCLUSION:

The office of the Committee has attempted to tell the public of the contribution being made by physicians of the State to the present emergency. The mother of a boy who is in the army heard one of the Illinois State Medical Society speakers on "Medicine and Defense" and she telephoned to say that she wished every mother of a soldier could hear that same talk.

This program will continue through speakers before lay groups, through the newspaper, over the radio, and by the distribution of the "Do You Know Column" to important laymen in all sections of the State.

Respectfully submitted,
Jean McArthur, Secy.,
Educational Committee

WE MUST DO EVEN MORE

The Japanese onslaught on Pearl Harbour, the Philippines, Malaya, and Java, the Nazi attacks on our east coast merchant ships have brought America face to face with the reality of war — war that encircles the globe. We know that this is *our* war, one which demands all-out effort in service, materials, machines and money.

We as physicians and surgeons, are well aware of the importance of medical service in the nation's all-out fight for freedom. We have already shown our willingness to serve on foreign and home battlefronts in the care of both armed and civilian forces. This is our professional job. But we must do even more.

As Americans, we must help provide the money to expand the war program to the maximum of our resources. Tax dollars are not enough. Loans to the Government from banks do not make up the deficit. We as individuals must lend our dollars to the government through the purchase of war securities—THE UNITED STATES SAVINGS BONDS.

The dollars invested in United States Savings Bonds buy planes, tanks, ships and guns. The buying of securities reduces our own purchasing power for material goods and thereby serves as a check upon runaway prices and inflation. For us as individuals, the bonds represent savings which grow in value. The Bonds may be redeemed by an owner any time after sixty days from the date of issue. Hence, we can draw upon these financial reserves in case of need.

Freedom Bonds, Victory Bonds — we must buy and continue to buy these war securities. We must put our dollars into the front line battle in America's fight for freedom.

For Security — there is no better investment than Defense Savings Bonds. You may start by buying a 10-cent Defense Stamp today.

Correspondence

PREPARATION OF HUMAN PLASMA

ROLAND R. CROSS, M.D.,
Illinois Director of Public Health
SPRINGFIELD

There is a widespread interest at the present time in the preparation of human plasma for transfusion. A nationwide program has been instituted through the American Red Cross for the collection of blood for this purpose, for the Army and Navy. Because of the recognized value of human plasma in traumatic conditions accompanying disasters, many inquiries have come from various sections of the State, with reference to preparing plasma locally for Civilian Defense and other purposes.

Although, on the surface, the preparation of plasma may appear to be a rather simple procedure, a very careful and detailed technique has been established by the National Institute of health (which controls all biologics distributed nationally in interstate commerce). This technique takes into consideration various dangers and hazards which may be encountered in the preparation of plasma by workers unskilled in this particular type of laboratory technique. Whereas plasma which is properly prepared is almost completely innocuous and extremely beneficial for the indicated conditions, improperly prepared plasma, without the necessary safeguards, can be very dangerous. Some of the safeguards and precautions, which must be observed in order to prepare a final product which is innocuous, include:

1. Drawing the blood, under suitable circumstances, into a suitable container.
2. Maintaining the citrated blood at suitable temperatures and removing the plasma as rapidly as possible.
3. Performing sterility tests.
4. Pooling the plasma.
5. Adding the proper preservative, and bottling the plasma into final containers *in a closed system.*
6. Performing both sterility and safety tests on the final containers, to ensure a safe final product.

All the handling of plasma should preferably be performed in a "sterile" or dustfree room.

Whereas the experience of many years has taught most hospitals that the preparation of intravenous solutions is attended by so many difficulties that they no longer attempt to prepare these products themselves, these same hospitals appear to have been presuaded that the preparation of plasma is a relatively simple matter. This is a fallacious point of view, because plasma is a biologic, and many years' experience in the preparation of biologics has demonstrated the need for the most scrupulous technique in the handling of serums, far more rigorous than that required in the preparation of intravenous solutions.

It is not the intention of the Department to discourage the local production of plasma when it can be done safely and economically. However, it is urged that the rules laid down by the National Institute of Health be followed in all establishments doing work of this nature, thereby protecting not only the patient, but also the establishment which engages in the preparation of plasma.

A more detailed presentation of the accepted technique for handling blood and preparing plasma will appear in an early issue of this *Journal.* The above is a broad outline of the fundamentals of proper technique.

WOMAN'S AUXILIARY NOTES

The Woman's Auxiliary to the Chicago Medical Society held its March meeting at Marshall Field & Company's English Tea Room. Dr. John S. Nagel, chairman of the State Benevolence Fund was the guest speaker.

The Woman's Auxiliary to the Peoria City Medical Society held its February meeting at the University Club. Mrs. Allan Foster, chairman of the legislative committee presented the speaker Dr. Harry A. Durkin, who spoke on "Public Health Problems."

Dr. Durkin stated in opening that one of the surest ways to appraise the IQ of a city is by its health and educational ideals. He then spoke of the five man board of public health. This board operating on a non-political basis is comprised of three laymen and two doctors all of whom serve without compensation. The board has control of all expenditure pertaining to Peoria's public health and is authorized to appoint the health commissioner, as well as every employee connected with the public health service in any capacity.

Besides the auxiliary members thirty representatives from the Council of Social Agencies attended the meeting.

The Women's Auxiliary to Vermilion County Medical Society held the February meeting at the Lincoln Hotel. Mrs. J. C. Moore, Hoopeston, president presided during the annual business session. Reports of various committees were given.

Mrs. C. L. Bennett, Hygeia Chairman reported 87 subscriptions in the organization as having been placed in the schools, waiting rooms, railroad stations, and other public places during the year.

Mrs. Charles W. Stigman
Press & Publicity

Mrs. Harry Otten, President

CHILD HEALTH DAY — 1942

By the President of the United States of America

A proclamation

WHEREAS the Congress by joint resolution of May 18, 1928 (45 Stat. 617), has authorized and requested the President of the United States to issue annually a proclamation setting apart May 1 as Child Health Day:

NOW, THEREFORE, I, FRANKLIN D. ROOSEVELT, President of the United States of America, in recognition of the vital importance of the health of children to the strength of the Nation, do hereby designate the first day of May of this year as Child Health Day.

And I call upon the people in each of our communities to contribute to the conservation of child health and the reduction of illness among children by exerting every effort to the end that before May Day, Child Health Day, children over nine months of age be immunized against diphtheria and smallpox, the two diseases for which we have the surest means of prevention.

IN WITNESS WHEREOF I have hereunto set my hand and caused the seal of the United States of America to be affixed.

DONE at the City of Washington this 6th day of February in the year of our Lord nineteen hundred and forty-two and of the Independence of the United States of America the one hundred and sixty-sixth.

Franklin D. Roosevelt

EXAMINATIONS

American Board of Obstetrics and Gynecology

The general oral and pathological examinations (Part II) for candidates (Groups A and B) will be conducted at Atlantic City, N. J., by the entire Board, from Thursday, June 4, through Tuesday, June 9, 1942, prior to the opening of the annual meeting of the American Medical Association.

Group A, Part II, candidates will be scheduled for examination the first part of the examination period, and Group B, Part II, the latter half. Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office before April 15, 1942.

As previously announced in the Board booklet, this fiscal year (1941-1942) of the Board marks the close of the two groups of classification of applicants for examination. Thereafter,

the Board will have only one classification of candidates, and all will be required to take the Part I and Part II examinations.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. The Secretary will be glad to furnish these forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Paul Titus
Secretary

WITH YOUR HELP WE SHALL BE VICTORIOUS IN OUR FIGHT AGAINST CANCER

Managing Director of the American Society for the Control of Cancer
C. C. Little, ScD.

The real existence of the greatest national emergency in our history is now recognized by every intelligent American citizen. Along with the vast demands made upon our courage and patience by this situation is a keener realization of our responsibilities to care for the lives and happiness of those unfortunate people who find themselves in personal physical adversity.

The greatest of all these menaces to the health, happiness and life of our people is cancer. The quality of its threat and of its power as a killer is unique. War itself may take a larger toll of Americans in the years to come. Various heart conditions of cardiac disease may do the same thing. Neither, however, will so silently, so grimly, and with such evil power to disintegrate moral stamina, invade the lives and families of our people. We must not lose sight of this fact. No matter what our emergency obligations may be, we must not forget this great continuing enemy of mankind.

Fear, ignorance, and delay are the three allies of cancer which lead to disaster and death. They can be overcome by knowledge of the early signs and symptoms of the disease and of the methods of fighting it. The American Society for the Control of Cancer throughout the country has for years been engaged in this battle. It is making progress. It must not lose the gains made, and indeed must drive ahead. The defeat of fear, ignorance, and delay lies in the adoption of an intelligent and controlled point of view by each individual. These same qualities will contribute to his or her success in fighting whatever the national emergency may present.

The fight against cancer is an ally in the fight against our foreign enemies. The methods are much the same. The qualities appealed to in the individual are similar. The complete victory spoken of by the President in discussing the international situation is just as applicable to our fight against cancer. Both victories can be gained. We must recognize how closely they may be related to one another and must act speedily, courageously, and untiringly to make both possible.

HANDICAPPED CHILD MUST LEARN TO LIVE IN NORMAL SOCIETY

The hadicapped child must learn to live in a normal society as most of his activities will be with normal people, Ruth Beckey, Ph.D., Columbus, Ohio, points out in *Hygeia, The Health Magazine* for March. He should feel that he is normal in any situation not demanding the use of his special deficiency.

Dr. Beckey classifies those children who are seriously handicapped, differing enough from other children to make adjustments to life very troublesome, in four groups: The physically handicapped (the crippled in body, the blind and the deaf); the mentally deficient (those who cannot compete satisfactorily in educational pursuits with the majority of children); the asocial (those who lie, steal, fight or withdraw entirely from any social situation), and those with a combination of physical, mental and psychologic maladjustments. "In the analysis and classification of all four groups of handicaps," she says, "the physician is the foremost consultant. . . . Not until he is consulted can the educational director proceed with her program of reeducation. . . .

"To be happy with a serious handicap, the child must have the right attitudes toward his deficiency; he must be healthy mentally. He is not mentally healthy until he is able to adjust himself to his environment with the least friction and at the same time find his life highly satisfactory and pleasant. A mental hygiene program for the handicapped child is not essentially different from that for the normal child, since both groups are motivated by the same fundamental human drives. All children want to be loved, to belong to some one, to achieve success, to gain approval and to feel emotional and economic security. The child also wants to feel well physically."

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

I just paid the first installment of my 1941 income tax. Under plans now proposed by the Secretary of the Treasury it will double for 1942. That does not worry me — I have long felt that America was worth fighting for and paying for. This war, like all wars, is an economic war, both from the standpoint of cause and its final victory. It is everyone's war economically. We are being taxed and we are being deprived both to produce war material and to allow us to purchase defense bonds. As Americans, "we can take it." Once when a husky college football player applied to George Halas, of the Bears, for a position on his team, Mr. Halas asked him his qualifications; he replied, "I can take it." Mr. Halas informed him that players on the Bear team "Had to give it."

We have been in this war three and one-half months, and up to the present we have taken a lot. First, we were taken by surprise; our commanders were not even there. The surprise cost us millions of dollars in equipment and hundreds of lives. We were all aroused and we were instantly unified. We had been led to think by those supposed to know — that Japan could be taken care of very easily, in fact, almost any afternoon. We called it a dastardly act, and excused ourselves on that basis. We did, however, make a firm resolution, as a nation, that we could and would lick the Japs, Germans and Italians. We would do this by the spirit that built America. We would omit politics. Corporations would not profit by going on an all war basis. Labor would call off strikes for the duration of the war. Women would be molded into industry. Taxes would be raised. Defense Bonds would be bought. The medical profession would furnish the best medical care any army ever had. We are going to give it. Every man on the team is going to play for the team, and as soon as it is found out that he is not cooperating something is going to be done about it.

How are we progressing in the war up to date? We have had a series of reverses. We are told these were to be expected because of a surprise attack and because our commanders were not on the alert. If we were going to cut out politics why did it take so long after the report of the President's Committee before an order was issued for the commanders to be court martialed. This was after a public demand. As far as I can determine it is important for the morale of our people to know just what happened and why at Pearl Harbor. If innocent, let them be so declared and return them to service, if guilty let us get them off the payroll.

The Office of Civilian Defense had a political flavor to it and it took a united stand by the people to change it from a more or less personal political welfare group to a non-political defense program. We are now developing enough public opinion that there may be a chance of getting Walter Winchell out of his uniform or actually in the navy. Now, I think all of these things might be called petty. For instance, the salary we pay our commanders at Pearl Harbor will not be an economic determination of the war. Whether we had a few high salaried dancers in the Office of Civilian Defense did not make much difference. Whether Walter Winchell actually goes to fight will not make any difference in the outcome. The thing is that the American people are thinking and they are

furnishing the fighters and they are paying the bills. They would like to see politics and pull, out of our war effort.

What about business: On the whole business has done a fine job, there are some exceptions. The exceptions should be investigated. Management should not raise the pay of officers and give bonuses during the war. The capitalistic system is being tested. Management is being watched by every reformer and social change enthusiast. Public opinion is in the making. Purchasers for the government should have some idea of the cost of producing what they purchase. Business should have a fair margin of profit which will allow them proper maintenance of their property and a surplus to swing back to civilian production when the war is over. Corporation profits are not so easy to determine — on a basis of capital stock. In many instances the amount of outstanding capital stock represents a number of stock dividends. I have repeatedly pointed out that the declaration of stock dividends and extra cash dividends during the twenties did much to promote the wild stock market gambling of that period. Both politicians and management said, "Don't sell America Short." Carpenters, bricklayers, plumbers, doctors, lawyers, janitors, school teachers, the small business man all got aboard. We all bought. We looked at the paper every night to see how much Insull or Radio or Steel had gone up. We owned ten shares, it had gone up $10.00. We went out and bought something. Everything was humming. We finally had bought about all we could use, automobiles, radios, washing machines, silk shirts, joined a couple of clubs, etc. We quit buying, and before Mr. Hoover could get around the corner we were in a staggering depression. Let's not make that mistake after we win this war. Perhaps the government will see to it that we don't. We will pay our excess profits, etc., to the government who will re-ration them out in some form of social security. Even in the midst of our war we are planning on extending our social reforms or security as we call them. We are following generally the social reform of England, and the war may bring us up to them. Management faces a dual responsibility — that of producing the material to win the war, and that of re-creating confidence in free enterprise.

How about labor: Well labor has not been so bad. The rank and file are ok. The real trouble with labor is the politics in it and the management in it. Labor is somewhat in the same position that the politicians in industry and the management in industry were in. They are being coddled by the government. Yes, I think in the Coolidge and Hoover administrations the government coddled business in a certain way. They thought business powerful. Who ever heard of politicians not wanting power! George Washington did not want power — he refused a third term. Even in our infancy he thought political power dangerous. General Sherman did not want the nomination for President. He was disgusted with politicians. Do I think the present administration is coddling labor? I do. Why? For two reasons: First, the present administration is made up of politicians and social reformers. I think some of them are very sincere and they believe that certain social reformers are necessary to maintain our democracy. In other words, we must have a social revolution, but it can and should be bloodless. This group is sympathetic with labor and they just naturally coddle labor as a mother coddles a child. Now believing this social reform necessary, they coddle labor for another reason because labor has one great power, that of voting and if they are to achieve their ends they must have the labor vote to keep their politicians in power. Now the real politicians coddle labor, not because they see a necessity for all this social reform; in fact, some are against it, but they see labor as a mass voting power for them as long as they coddle more than the other fellow. What are the evidences that labor is being coddled? Strikes in war production plants with boys at the front at $21.00 per month. The one drafted with no choice of hours, station, danger or pay, going to the front to fight; the other bickering over double pay, hours of work and the closed shop. One marches on, and the other marches off. Do I think there should be a law against strikes and picketing? I think we already have too many bad laws and too few good ones. We should be careful about passing more bad ones. I don't think laws are necessary for labor. I don't think they are necessary for business. Let's take coddling out and see where we get. Public opinion and a firm hand in

Washington will do much to keep both business and labor under control. If not, let's legislate.

Many people are discouraged just now, that is, the ones I talk to privately. They come from all walks of life. What are they afraid of? They are afraid that Pearl Harbor was not just an accident — a surprise attack. They are afraid that we are not on the alert, that as always there is politics in the military affairs, that there is great waste in our government, that we are fighting to prevent dictatorship and that we are developing a mass dictatorship developed on social reform promises. They are asking why, with the shortage of labor for war and the necessity of taking women in industry, we must hold on to the W. P. A., the C. C. C. and the N. Y. A. They think the W. P. A. was bad enough when it was a necessity. They think the C. C. C. was a worthwhile undertaking, but no excuse exists for it today. They think the N. Y. A. has been headed by and sponsored by communists and social workers whose sole object was a job for themselves and an opportunity to implant their ideas in the minds of youth. They have a feeling that they are making sacrifices in money, in necessities, in personal freedom and in sons and husbands. The government passed laws regarding these things. They sort of express themselves as feeling that there is too much talk about democracy and too little demonstration of it. They think there is unnecessary fumbling. They think the referee is afraid to make decisions. They all think we will win the war. They all want to do their part. They all wonder about the next war. If any of us are coddling or fumbling, let's quit and if we really think anyone else is, let's tell them about it.

What has all this to do with medical economics? Medical care is an essential part of our social and economic structure. Despite the fact that we are the healthiest nation in the world, we have been attacked by the bloodless revolution crusaders and perhaps some others. We have been told that we must broaden our social reform. I think we need some social reform, just as we needed it and have had it for many years in the past and will need and have it in the future. Just as free enterprise breaks down, social reform will come in. But let us remember that free enterprise that has not broken down may be caught in the avalanche. Medical care for one hundred and thirty million people could easily become the best bait of those eyeing the White House. Many of the ablest men in Washington are watching public opinion. Public opinion cost the members of the House and Senate a pension. We must not be lulled into a sense of security because we are engaged in war. Every doctor should use all of his energy to preserve free enterprise in medicine. And we must be on the alert. And let's tell management that if they want to retain free enterprise for themselves they must help to retain it for us. We are doing our part in this war with no increased pay, no bonuses, no double pay, no thought of hours of work, no politics and no personal ambitions.

Dr. R. K. Packard, Chairman
Committee on Medical Economics.

A. M. A. JOURNAL REPORTS THE FORMATION OF AUSTRALIAN-AMERICAN ASSOCIATION

The formation of an Australian-American Association is reported in *The Journal of the American Medical Association* for February 7 by its regular Australian correspondent.

He says that the movement toward forming the Association "was initiated by a body of Australian citizens in the belief that the ideals and outlook on life of the peoples of America and Australia are so closely allied that it needs only a thorough knowledge of each other to achieve mutual respect and full understanding of each other's point of view; that the future peace, freedom and prosperity of the Pacific largely depend on the achievement of such an understanding and friendly regard between these two peoples, and that the close friendship of the vigorous democracies of the New World may well be the decisive factor in reestablishing the principles of freedom in a threatened civilization.

"The Australian-American Association has as its objects (1) to extend fellowship and hospitality to American visitors to our shores and to afford them facilities for obtaining an immediate knowledge of Austraila, (2) to contribute to a better understanding by the Australian public of American affairs and point of view and (3) to attract in active membership citizens of both countries who will contribute to the furtherance of practical cooperation and mutual understanding."

Early tuberculosis is a silent disease lacking signs and symptoms. Sidney Walpaw, M.D., Ohio State Med. Jour., Apr., 1941.

Medicine and National Defense

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

The final steps in the printing and mailing of the enrolment form and questionnaire for physicians, dentists and veterinarians, described in the special article on the Procurement and Assignment Service which was published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and in the various state medical journals have served to provide the United States Army and Navy medical departments with additional names of physicians, mostly under 36 years of age, who stated that they were available for immediate service. The continuous development of the Army and Navy medical departments means that additional names will have to become available, in considerable numbers, daily for some months to come. Following the completion of internships for the current year there will become immediately available to both the Army and the Navy medical departments a considerable number, perhaps as many as 60 per cent, of those who are now completing their hospital training. Especially important is the statement from the Army Medical Department that commissions for limited service will be granted to physicians with physical disabilities, who may serve in the zone of the interior. Those who receive such limited service commissions will, of course, be accepted with waivers of disabilities.

Every physician who receives the enrolment form and questionnaire should return it immediately in the franked envelop which will be enclosed. He will have opportunity to indicate a preference for various types of service. Once dicating his enrolment for war service and will he has enrolled, he will receive a certificate in- be privileged to wear the official button of the Procurement and Assignment Service.

In times like these the demands on rapidly expanding federal agencies are tremendous. The difficulties in securing a sufficient amount of competent stenographers and typists and of needed office material and of space have complicated greatly the problem of maintaining correspondence in the office of the Procurement and Assignment Service. It is hoped that physicians will be patient in awaiting replies to letters discussing their individual problems, realizing that the primary task at the present moment is to maintain for the Army and Navy medical departments adequate lists of men on whom they may call immediately. No doubt, as the work of the office becomes stabilized the promptness of reply to correspondence will be facilitated.

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VENEREAL DISEASE CONTROL OFFICERS

The War Department announced on March 5 that specially qualified medical officers would be assigned to control and prevent the spread of venereal diseases among American troops. Supplementing the program already in effect, a venereal disease control officer with the grade of major will be assigned to each army camp of 20,000 or more men, each field army, air force and armored force, each corps area or department, each division, general headquarters and headquarters, communications zone. While the control measures employed by the Army in recent years have produced a satisfactory decline in disease rates and have been adequate for peace time, the change to a war time status introduces new conditions requiring additional control

measures. The new control officers will function within the Army and with civil agencies, cooperating with other health agencies in stamping out possible sources of infection.

Within the military commands, measures to be taken to assure prompt and adequate control include:

1. Supervision, coordination and improvement of the venereal disease educational program.

2. Cooperation with other military agencies in order to provide an adequate recreational program.

3. Cooperation in the provision and maintenance of adequate facilities for prophylaxis.

4. The provision of adequate physical inspections of troops to detect early such cases as may cause failure to report at sick call.

5. The provision, standardization and supervision of facilities for the diagnosis and treatment of infected military personnel.

6. Close cooperation with local civilian health authorities to insure the reporting of probable civilian sources of infection which occur among soldiers in order to assist the civilian agencies in the elimination of foci of infection.

7. The collection and detailed analysis of data concerning the incidence and sources of infections acquired in the troops of the respective organizations.

In the civilian communities the control officers will cooperate with all agencies concerned in the control of venereal diseases to insure the effective repression of prostitution and the adequate quarantine and treatment of infected civilians, as a measure to prevent infection of soldiers. Cooperation will be carried out with the Bureau of Medicine and Surgery of the U. S. Navy, the Division of Social Protection and the Public Health Service of the Federal Security Agency, the Federal Bureau of Investigation, health and law enforcement agencies of states and smaller political units, and certain unofficial agencies such as the American Social Hygiene Association.

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COMMISSIONS IN ARMY RESERVE OPEN TO MEDICAL SCHOOL LOWER CLASSMEN

Provision for appointing physically qualified first and second year male students at approved medical schools, and bona fide accepted matriculants as well, as second lieutenants in the Medical Administrative Corps, Army of the United States, was announced on March 4 by the War Department. Officers appointed in this manner will not be called to active duty until they have completed their medical studies and internships and have qualified for appointment as first lieutenants in the Medical Corps. Previously only juniors and seniors in medical schools came under these provisions. The change broadens the base of procurement and assures the Army Medical Corps of a steady yearly increment of new officers for its reserve components.

Applications for commissions in this group are to be made through the dean of the medical school, who will forward the application and accompanying papers to the commanding general of the corps area in which the school is located. A certified statement that the applicant is a bona fide accepted matriculant in medicine at the institution is required.

Officers appointed under these provisions will be discharged for the convenience of the government if they discontinue their medical education, matriculate at an unapproved school of medicine, fail to complete successfully the prescribed four year course of medical instruction or fail appointment in the Army of the United States within one year after completion of the prescribed four year course of medical instruction. Students at approved schools of medicine, dentistry or veterinary medicine who already hold reserve commissions in other arms or services will not be ordered to active duty while completing their studies. Successful completion of their courses will qualify them for transfer as first lieutenants in the Medical Corps, Army of the United States.

NOTICE

Dr. Charles H. Phifer, Chairman for 6th. Corps Area, Procurement and Assignment Service for Physicians, Dentists and Veterinarians, maintains his official office at 30 North Michigan Ave., Chicago, and should be addressed there instead of The Federal Building, Chicago.

APPOINTMENTS BY OFFICE OF CIVILIAN DEFENSE

Dr. John S. Coulter, associate professor of physical therapy, Northwestern University Medical School, Chicago, has been appointed regional medical officer of the sixth Civilian Defense region with headquarters in Chicago. Dr. Coulter was a member of the regular army corps for about ten years and during the first world war commanded a hospital center in Savenay, France. Since his resignation from the Army Medical Corps in 1920 he has practiced medicine in Chicago. He is a member of the Council on Physical Therapy of the American Medical Association and is the author of a book entitled "History of Physical Therapy."

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BLOOD PLASMA

In the grim business of preparing for possible disasters the State of Illinois is also at the moment in the process of working out a plan for the Statewide collection and distribution of blood plasma for civilian use. This undertaking is, for a variety of reasons, not so simple as it may seem.

In the first place, the Nation's Armed Forces require virtually all the dried blood plasma that can be produced at present.

In the second place, the processing of plasma is one of the most delicate of bacteriological operations, and it can be done successfully only by specially trained laboratory-workers, and only with expensive equipment in laboratories approved by the National Institute of Health. The enthusiasm of many local communities for collecting blood plasma independently speaks well for their patriotic interest but may prove dangerous in its practical results. There are only a very few laboratories equipped to do the work successfully. And if the plasma is not prepared properly, it may produce severe toxic reactions in the patient.

In the third place, the State could under no circumstances set up a blood collection plan for civilians which might conflict with the all-important blood collection work which the American Red Cross is doing for the Armed Forces.

In spite of these and other difficulties, however, the value of blood plasma in times of certain possible civilian emergencies might be almost inestimable. It is well known that it takes at least a half an hour to perform an ordinary person-to-person blood transfusion in a hospital, with all the necessary typing and testing. And that half hour, added to the time spent in moving the patient to the hospital, might cost the life of a person who had — for example — been the victim of *shock,* in a civilian defense disaster. If large numbers of injured persons were involved, the delays in some cases would very likely amount to several hours. Blood plasma, on the other hand, can be administered right on the scene of the accident, and without any typing or testing. It is on this account that Governor Dwight H. Green is interested in obtaining a supply of blood plasma that would be immediately available for civilian use on a Statewide basis.

With the approval of the Office of Civilian Defense at Washington, the Illinois Department of Public Health is now preparing to collect blood for this purpose, from volunteer blood donors in a few communities. Plasma will be produced from this blood in one of the few available laboratories equipped to do the work, and approved by the National Institute of Health. It is expected that, when this plasma is processed, it will be placed in readiness for emergency use in several key cities in the State, from which it may be sent by airplane to the scene of any possible Illinois disaster.

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KEEP 'EM WORKING

Fundamentally it may be said that all of the war efforts of the Department have the single aim that Governor Dwight H. Green has expressed in his wartime health slogan: for victory, protect health, and *Keep 'Em Working!*

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ARMY NEEDS TEN THOUSAND NURSES

The U. S. Army Nurse Corps has immediate need for three thousand qualified registered nurses, and for ten thousand in all before the end of 1942, to keep pace with the expanding army, the War Department announced on March 13. Applicants who can fulfil the Army Nurse

Corps requirements will be appointed in the grade of Nurse, with the relative rank of Second Lieutenant. The pay is $840 a year in addition to maintenance and uniform equipment. Appointments as nurse will be for the duration of the war. Promotions to higher grades are made in peace time only after three years of service, but this rule no longer applies. The appointment authority for the Army Nurse Corps is vested in the commanding generals of the various corps areas. However, applications for appointment may be made through any local office of the National Red Cross Nursing Service, which is acting as procurement agency for the corps. When the quota for any particular corps area may have been filled, applications will be referred to another corps area where a shortage exists.

An eligible applicant must be of good character, unmarried, a citizen of the United States, between 22 and 30 years of age, at least 5 feet tall and of standard weight for her age and height. She must be a graduate of an accredited high school giving a four year academic course and of a school of nursing of approved standards, and a registered nurse. Application papers must be accompanied by an unmounted autographed photograph of the applicant taken within the preceding two years, and a statement from the proper official of the high school from which she was graduated, giving the date of graduation and her numerical place in the class.

The physical fitness of an applicant is determined by an examination by a board of medical officers at the nearest army post.

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THE WORK OF NURSES IN CIVILIAN DEFENSE

A nursing consultant is on duty as a member of the staff of the Medical Division of the Office of Civilian Defense in Washington, and the Subcommittee on Nursing of the Health and Medical Committee of the Office of Defense Health and Welfare Services also serves as the Nursing Advisory Committee of the OCD. To assist the regional offices of civilian defense, field nursing consultants of the U. S. Public Health Service, the U. S. Children's Bureau and the American Red Cross have been made available for consultation. One nurse representing the Red Cross and another representing one of the other two agencies have been assigned to each state. The most recent development in the nursing program is the establishment of state nursing councils, which are made up of representatives of nursing organizations, official agencies with nursing programs and the Red Cross. Nurses are required in the Emergency Medical Service now being developed by the medical division of the OCD for the care of casualties in hospitals and for service with emergency medical field units. Nurses will also be required for service in emergency base hospitals to be established in protected rural areas if needed for the reception of civilian casualties due to enemy action. Both the OCD and the Red Cross are urging promotion of the volunteer nurses' aide program to train assistants for nurses in casualty receiving hospitals and in field casualty services. Nurses are being urged by the medical division to arrange to teach home nursing courses, so that more women will be ready to care for sickness in their own homes during an emergency and relieve the hospitals of some of their load. Nurses are also asked to take Red Cross first aid courses so that they may be prepared to help in casualty services and also to qualify as instructors for first aid courses.

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SOLDIERS IN COMBAT AREAS TO CARRY SULFANILAMIDE TABLETS

The War Department announced on March 5 that every American soldier who goes into a theater of operations will be equipped with twelve sulfanilamide tablets in a special spill proof metal box as a standard addition to the first aid equipment of all troops in combat areas. Medical officers attached to units are to instruct the soldier in the proper use of the tablets, and careful checks are to be made periodically to see that each soldier carries the tablets. Experience in this war already has demonstrated the efficacy of the drug under war conditions, the War Department says. The small special container for the tablets can be operated with one hand by sliding the top of the box back, thus releasing a single tablet. Directions for use are printed on the back of the box.

REHABILITATION PROGRAM

Tests of a physical rehabilitation program, intended to make many registrants who were rejected because of minor physical defects fit for active military service, have been authorized in Maryland and Virginia, National Headquarters, Selective Service System, has announced.

Authorization of the rehabilitation programs in the two States marks the beginning of a long-planned nation-wide physical rehabilitation campaign. When the results of these pilot tests are evaluated, a date for the inauguration of the National program wil be set.

Only those registrants whose disabilities are certified by the Army as being remediable will be eligible to undergo treatment.

As one of the first steps in the Maryland and Virginia test programs, the Director of Selective Service of each State will submit to National Selective Service Headquarters lists of physicians and dentists qualified to correct physical defects of registrants. Physicians and dentists designated to render these authorized professional services will be paid by the Federal Government.

National Headquarters emphasized that any physician or dentist can apply to be designated to assist in the rehabilitation program. Physicians and dentists not already designated by registrants as their choice for dental or medical treatment, and other physicians and dentists who wish to take part in the program, may obtain the necessary application forms from their local boards.

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INFANTILE PARALYSIS IN ILLINOIS

With the closing of the year 1941 and planning for the President's Birthday drive against infantile paralysis, a review of the recent activities of the poliomyelitis virus in Illinois has timely interest. According to preliminary reports it appears that 398 recognizable cases of infantile paralysis occurred in Illinois last year, a total figure which was exceeded in this State only three times in the last ten years. There has been an observed tendency, in this geographic area, for poliomyelitis incidence to run high for two consecutive years, and then low for from two to four years before another peak is reached. If this pattern holds true, it may reasonably be expected that the case reports from this disease might be somewhat reduced during 1942 and 1943.

After the low point in infantile paralysis case reports in Illinois was recorded, with but 82 known cases, in 1929, the following two years had a high prevalence: 402 and 700 cases of infantile paralysis reported, respectively. There followed four years in which the average number of reported cases in the State was 216 and the median 222. This relatively quiet period in the history of the poliomyelitis virus in Illinois was again followed by two successive years of greater activity. In 1936 the case reports reached 689, and in 1937 the State suffered the highest incidence of poliomyelitis which it has ever recorded, with 779 cases reported. Again there followed a comparative lull, with hardly more than a hundred cases on record for 1938, and fewer than two hundred for 1939. This respite was again followed by a peak in 1940, when 583 reported cases of infantile paralysis occurred in the State; and the provisional figure, 398, for 1941 completes the picture of another two-year spell of heavy poliomyelitis incidence.

During the last three months of 1941 there were reported in Illinois an average of about two cases every three days, as against three cases every day during the same period of 1940. This greater prevalence in the final quarter of the year 1940 gave public health authorities no bright hopes for the outlook for infantile paralysis in Illinois in 1941. But the decrease at the close of last year may possibly be construed as a hopeful sign for 1942.

Should the State be lucky enough to experience once more a decline in the reported incidence of this disease, the breathing spell will be put to good purpose in the research laboratories of the Illinois Department of Public Health, where the current study of the disease has already attracted nationwide interest. Since no simple practicable measures by which children may be immunized against poliomyelitis are as yet known, these occasional quiet periods of low incidence should be seized upon by medical and public health workers as opportunities for uninterrupted study and research.

And by contributing to the support of the National Foundation for Infantile Paralysis, through its local County Chapters, the people of the State can aid materially in the task of developing a workable method for the prevention and control of the disease. Always campaigning actively against poliomyelitis, the Foundation has contributed funds and supplies to the important research project which the Illinois Department of Public Health is carrying forward with the the cooperation of the Cook County Public Health Unit.

Collapse therapy is not a panacea for pulmonary tuberculosis. It is a valuable adjunct when used in conjunction with the time-proven principles now in common practice. Every patient should have the benefit of mature judgment to determine the possibilities of expediting recovery by the use of compression methods. An early diagnosis, however, together with the intelligent selection of therapeutic measures, offers a patient the best chance of recovery. C. Howard Marcy, M.D. Pennsylvania's Health, Dec., 1941



Sharp & Dohme, in cooperation with the Southeastern Pennsylvania Chapter of the American Red Cross and the United States Navy, have developed a "drop-proof" and "water-proof" package for their 'Lyovac' Normal Human Plasma. Twelve packages were dropped into water and twelve onto land, all without damage.

"LYOVAC" NORMAL HUMAN PLASMA

One of the most interesting developments in medicine is the widely increasing use of human blood plasma in the treatment of shock, burns, hemorrhage and hypoproteinemia .

And one of the most interesting contributions to the ready availability of human plasma at any time and at any place is 'Lyovac' Normal Human Plasma — a dried plasma preserved under vacuum which maintains its full therapeutic effectiveness for at least five years without refrigeration.

Over a decade ago the Research Laboratories of Sharp & Dohme began the development of the process and package which made possible this practical and valuable contribution to medicine.

The blood is obtained from healthy, fasting donors, and is then tested for freedom from disease. The cellular material is centrifuged out, and the clear plasma is drawn off, pooled, and filled into individual containers.

The plasma is frozen at a temperature far below zero and the containers placed in huge vacuum processing chambers where the moisture is drawn off under vacuum so that less than one-half of one per cent moisture remains.

While under vacuum, a rubber stopper is placed in the glass neck of the vial, the stem of which is then flame-sealed, thus providing an air-tight, moisture-proof container for the dried plasma under vacuum.

The dried plasma restores easily and promptly to the liquid state merely by the addition of pyrogen-free, triple-distilled water supplied with each package.

In civil practice it has met the emergency plasma requirements of many physicians and patients, and has contributed to the saving of many lives. In military practice, through the use of dried plasma processed by the company from blood donated to the American Red Cross for the Army and Navy, it has already proven its value at the torpedoing of the destroyer Kearny, and at Pearl Harbor.

PRELIMINARY PROGRAM

OF THE

One Hundred Second Annual Meeting

Illinois State Medical Society

HOTEL ABRAHAM LINCOLN
SPRINGFIELD, ILLINOIS
MAY 19, 20, 21, 1942

General Sessions

OPENING MEETING

TUESDAY AFTERNOON, MAY 19, 1942

1:00 Meeting officially opened by the President, Charles H. Phifer, Chicago.
Invocation—
Address of Welcome — The Mayor of Springfield.
Address of Welcome — President, Sangamon County Medical Society, Berton W. Hole, Springfield.
Report of Chairman, Committee on Arrangements, Hermon H. Cole, Springfield.
Adjournment for scientific meetings.

TUESDAY EVENING, MAY 19, 1942

8:00 Oration in Medicine —
"Macrocytic Anemia."
Cecil J. Watson, Professor of Internal Medicine, University of Minnesota Medical School, Minneapolis, Minnesota.

9:00 Oration in Surgery —
"Surgical Management of Lesions of the Esophagus, Stomach, Rectum and Colon."
Frank Lahey, Lahey Clinic, Boston, Massachusetts.

WEDNESDAY AFTERNOON, MAY 20, 1942

1:30 President's Address —
Charles H. Phifer, President, Illinois State Medical Society, Chicago.

THURSDAY MORNING, MAY 21, 1942

Induction of the President-Elect

Immediately following the completion of the second session of the House of Delegates, the President-Elect, Edward H. Weld, Rockford, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, Charles H. Phifer.

All members and guests at the meeting are invited to attend this interesting function.

Joint Session

WEDNESDAY MORNING, MAY 20, 1942

Joint session of Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.

MEDICINE AND THE WAR

9:00 "A Prize for Good Health — Extending the 4-H Principles to Adolescent Youth."
Maurice L. Blatt, Chicago.

9:20 "Analysis of the Vision of 200 Consecutive Selectees."
G. Henry Mundt, Chicago.

9:40 "Neuropsychiatric Problems of the Present War."
Benjamin Boshes, Chicago.

10:00 "Medicine and the National Program."
Frank Lahey, Boston, Massachusetts.

10:20 "A Statistical Study of 500 Soldiers with Symptoms Referable to the Heart."
D. E. Markson, Chicago.

10:40 "The Detection of Venereal Disease in the Second Million Selectees."
R. A. Vonderlehr, Washington, D. C.

11:00 Title to be announced.
Earl Barth, Chicago.

11:20 "Neurocirculatory Disease in Draftees."
Harry A. Durkin, Peoria.

11:40 "Virus Disease and the Soldier."
Hobart Reiman, Philadelphia, Pennsylvania.

Section Programs

SECTION ON MEDICINE

F. Garm Norbury Chairman
*M. Herbert Barker Secretary
Chauncey C. Maher Secretary Pro tem
*In service.

TUESDAY AFTERNOON, MAY 19, 1942

Joint session with Section on Surgery.

2:30 Title to be announced.
T. B. Throckmorton, Des Moines, Iowa.

3:00 "Surgery of the Biliary Tract."
V. S. Counseller, Rochester, Minnesota.

3:30 MEDICINE IN REVIEW — 1941 (Papers limited to 10 minutes)
"Shock Therapy."
S. N. Clark, Jacksonville.
Blast Injuries of the Central Nervous System."
Louis J. Pollock, Chicago.
"Chemotherapy."
Richard F. Herndon, Springfield.
"Allergy."
Ralph Mills, Decatur.
"Ulcer Management."
a. Medical
b. Surgical
V. S. Counseller, Rochester, Minnesota.

4:30 "Results of the Illinois Pneumonia Control Program," 1938-1942.
Doctors Sagen, Prange and Rosi, State Department of Public Health, Springfield.

WEDNESDAY MORNING, MAY 20, 1942

Joint session with Sections on Surgery; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, MAY 20, 1942

2:30 Chairman's Address
F. Garm Norbury, Jacksonville.

2:50 "Kenny Treatment of Poliomyelitis."
Philip Lewin, Chicago.

3:10 "Hypochromic Anemia in Malignancy."
Harold Swanberg, Quincy.

3:30 "Diuretic Salts."
Italo Volini, Chicago.

3:50 "Management of the Male Climacteric."
Clarence H. Boswell, Rockford.

THURSDAY MORNING, MAY 21, 1942

Joint session with Section on Surgery.

9:00 "Nutrition in the Surgical Patient."
Dwight E. Clark, Chicago.
9:30 "Alcoholism and Traffic Problems."
Lowell Selling, Detroit, Michigan.
10:00 "Carcinoma of the Rectum, General Considerations."
Nathan A. Womack, St. Louis, Missouri.
10:30 "Surgery in Infancy and Childhood."
Edwin M. Miller, Chicago.
Discussion opened by J. B. Gillespie, Urbana.
11:00 Clinicopathologic Conference.

SECTION ON SURGERY

Loyal Davis Chairman
J. C. Thomas Rogers Secretary

TUESDAY AFTERNOON, MAY 19, 1942

Joint session with Section on Medicine.
(For Complete Program, See Section on Medicine.)

WEDNESDAY MORNING, MAY 20, 1942

Joint session with Sections on Medicine; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, May 20, 1942

2:30 "Burns Treated by Paper Tissue-Cod Liver Oil Ointment Dressings After Surgical Cleansing." Kodachrome Slides.
George Callahan, Waukegan.
Discussion opened by LeRoy H. Sloan, Chicago.
2:50 "The Myth of Post-Operative Pneumonia."
J. R. Buchbinder, Chicago.
3:10 "Preventive Therapy in Recurrent Urinary Lithiasis."
E. H. Droegemueller, Elmhurst.
3:30 "The Diagnosis and Treatment of Surgical Lesions of the Mediastinum."
John Dorsey, Chicago.
Discussion opened by Stanton Friedberg, Chicago.
3:50 "Treatment of Surgical Shock."
Arkell M. Vaughn, Chicago.
4:10 "Massive Intestinal Resection."
Everett Coleman, Canton.
Discussion opened by Karl A. Meyer, Chicago.
4:30 "Considerations Regarding the Depth of Anesthesia."
William Cassels, Chicago.
Discussion opened by Hugh O. Brown, Chicago.

THURSDAY MORNING, MAY 21, 1942

Joint session with Section on Medicine.
(For Complete Program, See Section on Medicine.)

SECTION ON EYE, EAR, NOSE AND THROAT

Clifton Turner Chairman
G. Henry Mundt Secretary

TUESDAY MORNING, MAY 19, 1942

9:00 "Suppurative Dacryocystitis."
Robert H. Good, Oak Park.
9:30 "Common Diseases Affecting Sound Conduction."
H. B. Perlman, Chicago.
"Sound Conduction in the Human Ear."
(A Motion Picture Demonstration)
10:00 "A Review of Amblyopia ex Anopsia."
George T. Morgan, Bloomington.
10:30 "Accommodative Power and Head Injury."
Virgil Wescott, Chicago.
11:00 "Pathologic Findings in Eyes Enucleated for Glaucoma."
Louis Bothman, Chicago.

TUESDAY AFTERNOON, MAY 19, 1942

2:00—3:30 INSTRUCTION COURSE IN EYE
2:00—3:30 INSTRUCTION COURSE IN NOSE AND THROAT
"Chronic Osteomyelitis of the Skull."
Hans Brunner, Chicago.
3:30—5:00 INSTRUCTION COURSE IN EYE
"Visual Problems in Modern Industry."
Hedwig S. Kuhn, Hammond, Indiana.
3:30—5:00 INSTRUCTION COURSE IN NOSE AND THROAT
"Hearing Test and Aids."
C. C. Bunch, Evanston.

TUESDAY EVENING, MAY 19, 1942

6:30 Annual Banquet of the Section.

WEDNESDAY MORNING, MAY 20, 1942

9:00 "Tamari Factors Determining the Duration of Acute Tonsilitis."
A. M. Burman.
9:30 "Conservation of Vision Among School Children in Illinois."
Miss Audrey M. Hayden.
10:00 "Sinusitis Versus Other Factors in the Production of Eye Diseases."
George H. Woodruff, Joliet.
10:30 "Mediastinitis Second to Surgical Pathology."
Glenn Greenwood, Chicago.
11:00 "The Larynx, Tracheobronchial Tree and Esophagus in Kodachrome."
Paul H. Holinger, Chicago.
11:30 Business Meeting.

WEDNESDAY AFTERNOON, MAY 20, 1942

2:00—3:30 INSTRUCTION COURSE IN EYE
"Present Trend in the Treatment of External Diseases of the Eye."
Peter Kronfeld, Chicago.
2:00—3:30 INSTRUCTION COURSE IN NOSE AND THROAT
"Conservative Treatments of Sinusitis."
Thomas Galloway, Evanston.
3:30—5:00 INSTRUCTION COURSE IN EYE
3:30—5:00 INSTRUCTION COURSE IN NOSE AND THROAT
"Plastic Surgery."
Samuel Salinger, Chicago.

SECTION ON PUBLIC HEALTH AND HYGIENE

*Walter C. Earle Chairman
Roland R. Cross Chairman Pro tem

Henry C. Niblack Secretary
*In service.

"The Doctor Treats the Problem Child."
Paul L. Schroeder, Chicago.
"Public Health in War Time."
H. A. Holle, Chicago.
"Susceptibility of the Adult to Diphtheria."
A. J. Levy, Gilman.
"A Ten-Year Survey of Poliomyelitis in the Chicago Area."
Sidney O. Levinson and Albert M. Wolf, Chicago.
Title to be announced.
Allen McLaughlin, Springfield.
"The Survey of the State Department of Public Health."
Carl Buck, New York.

WEDNESDAY MORNING, MAY 20, 1942

Joint session with Sections on Medicine; Surgery; Radiology; Pediatrics; Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

THURSDAY MORNING, MAY 21, 1942

Joint session with Sections on Pediatrics, and Obstetrics and Gynecology.
(For Complete Program, See Section on Obstetrics and Gynecology.)

SECTION ON RADIOLOGY

E. E. Barth Chairman
Cesare Gianturco Secretary
"The Value of Miniature Chest Films."
Arthur Webb, Glen Ellyn.
Discussion opened by W. DeHollander, Springfield.
"Roentgen Ray Aspects of Rheumatic Fever."
Sol Ditkowsky, Normal.
Discussion opened by Edwin Rypins, Bloomington.
"Considerations on a Thousand Chest X-Ray Examinations Performed on Men Applying for Employment."
A. A. Bauer, Chicago.
Title to be announced.
Sidney Mesirow, Chicago.
Discussion opened by Fay Squires, Chicago.
Film Clinic.

WEDNESDAY MORNING, MAY 20, 1942

Joint session with Sections on Medicine, Surgery; Public Health and Hygiene; Pediatrics; Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

SECTION ON PEDIATRICS

Craig D. Butler Chairman
A. J. Fletcher Secretary

"The Physiologic Basis for Parenteral Fluid Administration."
Donald Cassels, Chicago.
"Technic of Intravenous Injection in Small Infants."
Mandel L. Spivek, Chicago.
"Indication for Blood Transfusion and for the Intravenous Use of Saline and Nutrient Solution."
James D. McKinney, Champaign.
"Observations on the Value of Intravenous Blood and Fluids in the Treatment of Acute Infections in Young Infants."
William Raycraft, Chicago.
"Methods of Preventing Reactions from Blood and Plasma Transfusions."
E. H. Fell, Chicago.
"The Parenteral Administration of Various Therapeutic Agents."
Robert D. Hart and Orville Barbour, Peoria.

Discussion of papers opened by F. W. Schlutz, Chicago, assisted by W. L. Crawford, Rockford, and Robert A. Black, Chicago.

WEDNESDAY MORNING, MAY 20, 1942

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; and Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

THURSDAY MORNING, MAY 21, 1942

Joint session with Sections on Public Health and Hygiene, and Obstetrics and Gynecology.
(For Complete Program, See Section on Obstetrics and Gynecology.)

SECTION ON OBSTETRICS AND GYNECOLOGY

Milton E. Bitter Chairman
Clyde J. Geiger Secretary

TUESDAY AFTERNOON, MAY 19, 1942

2:30—5:00
"The Tuberculous Obstetric Patient."
Fred M. Meixner, Peoria.
"The Third Stage of Labor."
Richard Paddock, St. Louis, Missouri.
"Anemia in Pregnancy."
E. Graham Evans, Aurora.

WEDNESDAY MORNING, MAY 20, 1942

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; and Pediatrics.
(For Complete Program, See Joint Session.)

THURSDAY MORNING, MAY 21, 1942

Joint session with Sections on Public Health and Hygiene, and Pediatrics.

"Asphyxia Neonatorium."
Curtis J. Lund, Madison, Wisconsin.
"New Born Pathology."
T. S. Potter, Chicago.
Discussion opened by Orville Barbour, Peoria.
"The Affect of the War on Maternal Welfare Program in Illinois."
Fredrick H. Falls, Chicago.
Discussion opened by T. B. Williamson, Mt. Vernon.
"Supervision of Maternity Departments by the State Health Department."
Howard Lewis Penning, Springfield.
Title to be announced.
Clifford G. Grulee, Evanston.

PROGRAMS OF SPECIAL ORGANIZATIONS

SECRETARIES' CONFERENCE

Carl E. Clark, Chairman Sycamore
R. T. Pettit, Vice-Chairman Ottawa
C. Otis Smith, Secretary Oak Park

TUESDAY EVENING, MAY 19, 1942

"Procurement and Assignment of Physicians for Military Service."
Charles H. Phifer, President, Illinois State Medical Society, Chicago.

"The Role of the Physician in Civilian Defense Programs."
John S. Coulter, Chairman of Physicians in Defense Work, Chicago.

MEDICAL WOMEN'S ASSOCIATION

Branches 2 and 17 of the American Medical Women's Association will meet in Springfield with the Illinois State Medical Society.

A scientific and social program is planned which includes an official breakfast and banquet.

Details will be published in the May Illinois Medical Journal.

ILLINOIS SOCIETY OF PATHOLOGISTS

O. H. Saphir, Chairman, Program Committee Chicago
I. Davidsohn, Secretary-Treasurer Chicago

TUESDAY MORNING, MAY 19, 1942

9:00 "Subdural Hematoma."
Paul C. Bucy, Chicago.
9:30 "Myocarditis."
Eleanor Humphreys, Chicago.
10:00 "The Storage and Significance of Tissue Glycogen in Health and Disease."
Samuel Soskin, Chicago.
15 Minute Intermission
10:45 Clinicopathological Conference conducted by John F. Sheehan and George Hellmuth, Chicago.

PHYSICIANS' ASSOCIATION DEPARTMENT OF PUBLIC WELFARE STATE OF ILLINOIS

Rudolph G. Novick President
Ethel A. Chapman Secretary-Treasurer

TUESDAY MORNING, MAY 19, 1942

"Treatment of Mental Disorders by Electrically Induced Convulsions."
Erich Otten, Jacksonville.
"A Preliminary Report on the Attempts to Control Tuberculosis at the Chicago State Hospital."
M. Greenberg and J. V. Edlin, Chicago.
"Centrally Located Tumors of the Frontal Parts of the Brain."
W. R. Kirschbaum, Manteno.
"Tuberous Sclerosis."
H. Josephy, Lincoln.
"Prognostic Factors in Cases of Psychoses Following Pregnancy."
E. A. Chapman, Elgin.
"Acute Psychosis in Selectees."
S. D. Klow, Elgin.
"Psychotherapeutic Aspects of State Hospital Psychiatry."
George Perkins, Chicago.
"A Rorschach Study in a Case of Frontal Lobe Lesion."
John Endacott, Manteno.
"Coramine in the Therapy of the Psychoses."
Bernard Skorodin, Chicago.

ILLINOIS CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS

Otto C. Schlack, President Oak Forest
George Thomas Palmer, Vice-President .. Springfield
Darrell H. Trumpe, Secretary-Treasurer .. Springfield

TUESDAY, MAY 19, 1942

11:00 A. M. Business Meeting.
12:00 Noon Luncheon.
"Bronchial Obstruction as Visualized by Bronchoscopic Cinematography." (Motion Picture)
Paul H. Holinger, Chicago.

Members of the medical profession are invited to attend the luncheon. Meeting will be adjourned by 1:00 P. M.

WOMAN'S AUXILIARY PROGRAM

TUESDAY, MAY 19, 1942

9:00 A. M. Registration.
10:00 A. M. Pre-Convention Board Meeting.
12:00 Noon Announcements
Convention Chairman.
1:30 P. M. General Meeting.
Mrs. Harry Otten, Presiding.
3:00 P. M. Address
E. H. Weld, President-Elect, Illinois State Medical Society.
3:30 P. M. Tribute to Abraham Lincoln
Lincoln's Monument
Lincoln's Home
7:00 P. M. Dinner — Leland Hotel
Speaker — Mrs. R. E. Mossiman, President National Medical Auxiliary.

WEDNESDAY, MAY 20, 1942

9:00 A. M. Registration — Leland Hotel
9:30 A. M. General Meeting.
Mrs. Harry Otten, Presiding.
10:30 A. M. In Memoriam
Mrs. H. B. Henkle, Chairman
11:00 A. M. Presentation of Problems of a Present Day Medical Auxiliary, conducted by Mrs. S. R. Magill.
11:45 A. M. Announcements
Mrs. D. H. Trumpe, Convention Chairman.
12:30 P. M. President's Luncheon — Leland Hotel
Speakers — Hon. Dwight H. Green, Governor of Illinois.
Col. Paul G. Armstrong, Director, Selective Service System, State of Illinois.
2:30 P. M. Post Convention Board Meeting.
Mrs. W. J. Wanninger, Presiding.
3:30 P. M. Tea — Home of Dr. and Mrs. H. H. Cole, 605 Williams Blvd.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 19, 1942

3:00 P. M. Address — E. H. Weld, President-Elect, Illinois State Medical Society.
3:30 P. M. Tribute to Abraham Lincoln
Mrs. Harold M. Camp, officiating.
7:00 P. M. Dinner — Leland Hotel
Speaker — Mrs. R. E. Mossiman, President, National Medical Auxiliary.

WEDNESDAY, MAY 20, 1942

12:30 P. M. President's Luncheon — Leland Hotel
Speakers — Hon. Dwight H. Green, Governor of Illinois.
Col. Paul G. Armstrong, Director, Selective Service System, State of Illinois.
3:30 P. M. Tea — Home of Dr. and Mrs. H. H. Cole, 605 Williams Blvd.

MATERNAL WELFARE COMMITTEE LUNCHEON

The fifth annual luncheon of the Illinois State Maternal Welfare Committee will be held at noon on Wednesday, May 20 at the Hotel Abraham Lincoln in Springfield.

The program will be a round table discussion on toxemias of pregnancy. led by Dr. F. H. Falls of Chicago; Dr. A. B. Owen, of Rockford and Dr. W. C. Scrivner of East St. Louis.

All physicians of organized medicine are cordially invited to attend.

MEETINGS OF THE HOUSE OF DELEGATES

TUESDAY AFTERNOON, MAY 19, 1942

3:00 First meeting of the House of Delegates called to order by the President, Charles H. Phifer, for Reports of Officers, Councilors, Committees, Appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

THURSDAY MORNING, MAY 21, 1942

9:00 Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committees and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

SCIENTIFIC EXHIBITS

Frank J. Jirka, Chairman Chicago
James P. Simonds, Director of Exhibits Chicago

"Health Education in the Doctor's Office."
American Medical Association — Thomas G. Hull, Chicago.
"Burns Treated with Cod Liver Oil Ointment."
George B. Callahan, Waukegan.
"Abortion."
F. H. Falls, Chicago.
"Gastroscopy as an Aid in Diagnosis."
Leo L. Hardt, Chicago.
"Tumors of the Chest."
Jerome R. Head, Chicago.
"Pulmonary Tuberculosis: Differential Diagnosis and Treatment."
Karl J. Henrichsen, Municipal Tuberculosis Sanitarium, Chicago.
"Health and War."
Illinois Department of Public Health — Leona East, Springfield.
"The Wartime Speed-up in Health Protection."
Illinois Department of Public Health — Leona East, Springfield.
"Medical Care Program for Recipients of Old Age Assistance and Aid to Dependent Children."
Division of Public Assistance, Illinois Department of Public Welfare, Springfield.
"The Treatment of Epitheliomas with Combination of X-ray and Destructive Procedures."
John M. McCuskey, Peoria and Wm. J. Morginson, Springfield.
"An Improved Method for Fixation of Fractures of the Neck of the Femur."
A. A. Mertz, Decatur.
"A Photographic Exhibit of Skin Diseases Peculiar to War."
Edward A. Oliver, Chicago.
"The Medical Profession in Civilian Defense."
Sixth Regional Civilian Defense Region, John S. Coulter, Regional Medical Officer, Chicago.
"Amputation at the Knee Joint: A Physiologic Amputation."
S. Perry Rogers, Chicago.
"Short Wave Diathermy: Technical and Clinical Considerations."
Milton G. Schmitt, Chicago.
"Motion Picture in Technicolor Showing Result of Treatment of Carcinoma of the Cervix Uteri."
Frank E. Simpson, Chicago.
"Endocrine Regulation of Growth."
Willard O. Thompson, N. J. Heckel and R. P. Morris, Chicago.
"Endometriosis."
Joseph A. Tuta, Chicago.
"Rectal Sodium Pantothal as a Basal Anesthesia to Supplement General, Local or Spinal Anesthesia."
M. L. Weinstein, E. L. Adams, and G. Light, Chicago.
"Cancer Control Campaign of Education by the Woman's Field Army."
Woman's Field Army of the American Society for the Control of Cancer — Mrs. Arthur I. Edison, State Commander, Chicago.

Technical Exhibitors

AT THE 1942 ANNUAL MEETING

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
The Armour Laboratories, Chicago, Illinois
Ayerst, McKenna & Harrison, Rouses Point, N. Y.
Biochemical Research Laboratories, Chicago, Illinois
The Borden Company, New York, N. Y.
Burroughs Wellcome & Company, New York, N. Y.
Camel Cigarettes, New York, N. Y.
Carnation Company, Oconomowoc, Wisconsin
Doho Chemical Corporation, New York, N. Y.
Eli Lilly and Company, Indianapolis, Indiana
C. B. Fleet Co., Inc., Lynchburg, Virginia
General Electric X-Ray Corporation, Chicago, Illinois
Gerber Products Company, Fremont, Michigan

H. J. Heinz Company, Pittsburgh, Pennsylvania
Horlick's Malted Milk Corporation, Racine, Wisconsin
The Kelley-Koett Mfg. Co., Inc., Covington, Kentucky
Kellogg Company, Battle Creek, Michigan
Lederle Laboratories, Inc., Chicago, Illinois
Mead Johnson & Company, Evansville, Indiana
The Medical Protective Company, Fort Wayne, Indiana
Mellin's Food Company, Boston, Massachusetts
Merck & Company, Inc., Rahway, New Jersey
The Wm. S. Merrell Company, Cincinnati, Ohio
The C. V. Mosby Company, St. Louis, Missouri
M & R Dietetic Laboratories, Inc., Columbus, Ohio
V. Mueller and Company, Chicago, Illinois
A. E. Mallard, Detroit, Michigan
Nutrition Research Laboratories, Chicago, Illinois
Parke, Davis & Company, Detroit, Michigan
Pet Milk Sales Corporation, St. Louis, Missouri
Petrogalar Laboratories, Inc., Chicago, Illinois
Philip Morris & Co. Ltd. Inc., New York, N. Y.
W. B. Saunders Company, Philadelphia, Pennsylvania
Sharp & Dohme, Philadelphia, Pennsylvania
Smith, Kline & French Laboratories, Philadelphia, Pennsylvania
E. R. Squibb & Sons, New York, N. Y.
Frederick Stearns & Company, Detroit, Michigan
Sutliff & Case Co., Inc., Peoria, Illinois
White Laboratories, Inc., Newark, New Jersey
Winthrop Chemical Company, New York, N. Y.
John Wyeth & Brother, Inc., Philadelphia, Pennsylvania

NOTES ON TECHNICAL EXHIBITS

ABBOTT LABORATORIES, Booth 8

Be sure to visit this booth where the Abbott-trained representatives in attendance will be more than glad to exchange notes with you regarding the newer Abbott specialties on display.

Nembutal, Pentothal Sodium, Sulfa-drugs, Intravenous Solutions, Bismarsen, Bismo-Cymol, Gold Sodium Thiosulfate, Sorbitol, Strophanthin-K, Cofron, Iberin, Histamine Diphosphate, Glucophylline, Trisodarsen, Acetarsone, Aldarsone, Multi-Vitamin products, Thiamin, Riboflavine, Nicotinic Acid, Nicotinamide, Sod. Pantothenate, Rejectal, Pyrodoxine, Klotogen, Hykinone, Kayquinone, Thromboplasin, Natopherol, Estrone, Estriol, Progestin, etc., etc., are included in this comprehensive exhibit.

A hearty welcome awaits you here. So! Stop in and See Us!

A. S. ALOE COMPANY, Booth 31

A. S. Aloe Company cordially invites you to visit Booth 31. They will have on display a complete line of American-made Stainless Steel Surgical Instruments, Surgical Supplies, Laboratory Apparatus and Physical Therapy Equipment.

Many new and exclusive items will be shown. Mr. T. H. Greenwell will be in attendance.

THE ARMOUR LABORATORIES, Booth 23

The Armour Laboratories are in the unique position of having access to one of the world's largest supplies of fresh glandular materials and over a period of fifty years have developed a technique of blending, processing and assaying these variable materials to produce preparations of maximum and unvarying potency.

In attendance at the Armour booth you will find representatives who will gladly furnish information on new Endocrine Products of the Armour Laboratories. A cordial invitation is extended to all members of the Illinois State Medical Society to visit our display in booth No. 23. Mr. R. H. Andrew will be in charge.

AYERST, McKENNA & HARRISON (UNITED STATES) LIMITED, Booth 30

"ADVANCEMENT IN THE FIELD OF ORAL HORMONAL THERAPY"

We take pleasure, particularly at this time, in announcing to the medical profession a new form of estrogen, demonstrating high oral activity.

Preliminary reports on the oral administration of this new conjugated estrogen, elaborated at the Ayerst Experimental Laboratories, are such as to lead early investigators to report that withdrawal bleeding may be produced in the human subject if desired.

Absence from toxic reactions and side effects, reports of symptomatic relief and marked improvement in the sense of general well-being of the patients treated, together with its economy, justify its use generally where estrogenic therapy is indicated.

As in the case of Emmenin, this new elaboration bears the stamp of approval of Dr. J. B. Collip, Director of the research institute of Endocrinology, McGill University, and is marketed by Ayerst, under the trade name

"PREMARIN"

Ayerst, McKenna & Harrison (United States) Limited
Biological and Pharmaceutical Chemists, Rouses Point, N. Y.

BIOCHEMICAL RESEARCH LABORATORIES, Booth 38

The Biochemical Research Laboratories will exhibit a display of vitamin products that are of current interest to the medical profession and will also include current teletype flashes of war and vitamin news.

THE BORDEN COMPANY, Booth 1

Up-to-date information about Borden's scientifically designed infant food at Booth No. 1. BIOLAC, a liquid modified milk, facilitates the preparation of formulas which fully satisfy all nutritional requirements of early infancy except vitamin C. NEW IMPROVED DRYCO, (now spray-dried instead of roller-dried), has increased potencies of vitamins A and D and quicker solubility. It retains the same high-protein, low-fat composition of original Dryco and offers the same unique formula flexibility. MULLSOY, an emulsified food for infants allergic to milk, is exceptionally palatable, readily digestible, and easy to prepare for feeding. It is a liquid preparation of soy bean flour, soy bean oil, water, and added carbohydrate and mineral salts. Other infant foods of special merit include BETA LACTOSE, the improved milk sugar, KLIM, powdered whole milk, MERRELL-SOULE POWDERED MILKS, and BORDEN'S SILVER COW IRRADIATED EVAPORATED MILK.

BURROUGHS WELLCOME & COMPANY (U. S. A. INC.), Booths 3 & 4

BURROUGHS WELLCOME & CO. (U. S. A.) INC., New York, presents a selected group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

CAMEL CIGARETTES, Booths 28 and 29

Camel Cigarettes will exhibit large detailed photographs of equipment used in comparative tests of the five largest-selling brands of cigarettes. These tests proved that Camels burn slower and contain less nicotine in the smoke than other cigarettes. Representatives will be available to discuss this research.

CARNATION COMPANY, Booths 17 and 18

Be sure to visit the Carnation Company exhibit in Booth No. 17 and 18. There you will see displayed an interesting model of the famous Carnation Milk Farms where cattle breeding and feeding experiments are carried on for the purpose of improving the dairy herds supplying the many Carnation evaporating plants. The story of Carnation's program of supervision of raw milk sources and the careful processing of Irradiated Carnation Milk is also told in an interesting manner.

DOHO CHEMICAL CORPORATION, Booth 36

The Auralgan Exhibit consists of a model of the human auricle four feet high, together with a series of twenty-four three dimensional ear drums, modelled under the supervision of outstanding otologists. Each of these drums depict a different pathologic condition based upon actual case observation and prepared, in so far as possible, with strict scientific accuracy so as to be highly instructive and interesting to all physicians.

As the observer looks into the large ear through a proportionately sized speculum, the ear drums appear successively within the canal so as to similate actual conditions seen in life. The successive changes of the ear drums are affected by automatic mechanism, and accompanied by a brief description of the condition.

This is the first time that such a complete modelling of ear drums has ever been executed in this scale.

ELI LILLY AND COMPANY, Booth 15

The Lilly exhibit is evidence of the interest of Eli Lilly and Company in the Illinois State Medical Society. Lilly products both old and new will be on display and Lilly representatives will be present to serve physicians in every possible way.

C. B. FLEET CO. INC., Booth 6

PHOSPHO-SODA (Fleet), a saline laxative, has been presented to the medical profession for over 50 years. This eliminant is suggested when a rapid non-griping action is desired. It is recommended in gall bladder disorders.

The profession is cordially invited to visit the booth of the C. B. Fleet Company, Inc.

GENERAL ELECTRIC X-RAY CORPORATION, Booth 47

For Illinois physicians there are 23 trained sales and servicemen in G-E branch offices and regional service depots located in Chicago, Springfield, and St. Louis, ready to carry out the long-established company policy that service — technical or mechanical — must be maintained throughout the life of any G-E apparatus.

X-ray equipment, electromedical equipment, the electrocardiograph, and accessory items, being technical in design and operation, require a trained organization of field men to sell intelligently, install properly, and help the user throughout the life of the G-E apparatus. For this important reason we want you to know the G-E man in your locality. Won't you visit our exhibit booth and get acquainted?

GERBER PRODUCTS COMPANY, Booth 12

The complete line of Gerber Foods will be on display — two dry, precooked cereals (one a wheat cereal, the other an Oatmeal which is wheat-free) 18 Strained Foods and 10 Junior or Chopped Foods. Booklets available for distribution to mothers or to patients on special diets, as well as the professional literature, all of which will be sent to registrants.

H. J. HEINZ COMPANY, Booth 14

The Heinz exhibit featuring Strained and Junior Foods merits your thoughtful attention if you prescribe for infant feeding or adults on soft diets.

The popular Nutritional Charts have something new added — a section on the "Application of the Science of Nutrition to Dietetics." While you're at the exhibit, register for the 10th edition.

The Heinz representatives will be glad to be of service.

HORLICK'S MALTED MILK CORPORATION, Booth 39

You are cordially invited to visit the Horlick Booth (Number 39), and enjoy a refreshing serving of chocolate malted milk.

This palatable, delicious and easily digested food-drink is often indicated when the doctor prescribes a liquid or semi-liquid diet. It is basic nutrition because it is a scientifically well balanced combination of proteins and carbohydrates of full cream milk and choice grains.

The attendants at the booth will be willing and glad to answer any inquiries and explain the qualities of our new vitamin fortified product.

THE KELLEY-KOETT MFG. CO., INC., Booths 42 and 43

One of the most important X-ray advances of many years, The Multicron Control, will be demonstrated at Booths Nos. 42 and 43 by The Kelley-Koett Manufacturing Company, Inc. of Covington, Kentucky. The Multicron is incorporated in the Keleket W-3-100 Combination Unit and is designed to take care of troublesome details automatically, leaving the doctor free to concentrate on the important factors of technique. It also assures work of uniformly high quality.

The W-3-100 is a complete Combination Unit with Generator, Tube Stand and Table. It permits Radiography and Fluoroscopy at all angles from Trendelenberg to vertical. It is equipped with Bucky Diaphragm, motor tilt table, stereoscopic shift, etc.

The Keleket Booths will be under the direction of Mr. G. E. Geise, Vice President. Don't fail to see it.

KELLOGG COMPANY, Booth 2

Kellogg's ready-to-eat cereals have an important part in the national nutrition program. Pep (whole wheat flakes with added bran) has been enriched with vitamins B and D, the vitamins so frequently lacking in the average American diet. Kellogg's other whole wheat and bran cereals — Wheat Krispies, Krumbles, Shredded Wheat, All-Bran and Bran Flakes — are rich in minerals and vitamin B too. Ask for your set of medical reprints covering recent research with bran. Corn Flakes and Rice Krispies are included freely in wheat-free and low residue diets.

Diet Lists, 100 Calorie Portion Chart, Vitamin Chart and Wheat Allergy folder available at the Kellogg booth.

LEDERLE LABORATORIES, Booth 52

Lederle Laboratories will again exhibit with the Illinois State Medical Society.

It is our pleasure to invite the members and visiting professional men to visit our booth where we will be pleased to discuss with them any of our outstanding products in either the biological or pharmaceutical field. Complete information of the various Sulfonamide products will be available.

M & R DIETETIC LABORATORIES, INC., Booth 27

M & R Dietetic Laboratories, Inc., booth number 27, will display Similac, a food for infants deprived partially or entirely of breast milk; also powdered SofKurd. Representatives will appreciate the opportunity to discuss the merit and suggested application of these products.

MERCK & CO. INC., Booth 20

War medicine and public health requirements have focused particular attention on the antibacterial properties of the sulfonamides, the nutritional value of the vitamins, and the antisyphilitic value of the arsphenamines and Tryparsamide.

Physicians who have need for a rapidly acting anesthetic for short operative procedures will appreciate the convenience of Vinethene for home, office, or emergency use.

Chronic ulcers, Raynaud's disease, scleroderma, and vasospastic conditions of the extremities may be benefited by the use of Mecholyl Chloride administered by ion transfer. Subcutaneous injection of Mecholyl Chloride may be employed for controlling attacks of suricular paroxysmal tachycardia.

Pyridium is established as an outstanding preparation for prompt symptomatic relief in urogenital infections.

Literature on all of these important products is available at the Merck booth, where Mr. S. A. Gaffney will be in charge.

MEAD JOHNSON & COMPANY, Booth 16

"Servamus Fidem" means We Are Keeping the Faith. Almost every physician thinks of Mead Johnson & Company as the maker of Dextri-Maltose, Pablum, Oleum Percomorphum and other infant diet materials, but not all physicians are aware of the many helpful services this progressive company offers physicians. A visit to Booth No. 16 will be time well spent.

MEDICAL PROTECTIVE COMPANY, Booth 60

The Professional Liability risk of the doctor cannot be given an underwriting classification with any other type or types of insurable hazards, without disadvantage to the doctor. The circumstances out of which arise the reciprocal rights and duties of a doctor and his patient are peculiar to their relationship; the interest of the doctor in the management and disposal of charges of negligence against him is not to be compared to that of any other class of damage suit defendants. The most exacting requirements of adequate liability protection are those of the Professional Liability field.

The Medical Protective Company is exclusively engaged in that field.

Our representatives, thoroughly trained in Professional Liability underwriting, invite you to confer with them at exhibit booth No. 60.

MELLIN'S FOOD, Booth 25

Physicians are cordially invited to call and make inquiries regarding details of composition and application of Mellin's Food. During the 75 years of its existence Mellin's Food has so well established itself as to be worthy of consideration in any attempt to arrange nourishment for infants, children and adults.

WM. S. MERRELL COMPANY, Booth 80

Among the new pharmaceutical developments to be featured at the Merrell exhibit are a combination of Nitranitol (brand of mannitol hexanitrate) with Phenobarbital, for the palliative treatment of essential hypertension, and a new anesthetic and antiseptic suppository, Diothoid, for relief of pain in hemorrhoids and other anorectal conditions.

Members and guests of the Society are cordially invited to visit the Merrell booth for a discussion of these and other distinctive therapeutic specialties.

C. V. MOSBY COMPANY, Booth 5

The C. V. Mosby Company extends to convention visitors a cordial invitotion to visit Booth No. 5.

Among the new books to be displayed are Kilduffe-DeBakey "The Blood Bank and the Technique and Therapeutic of Transfusions," Dieckmann "The Toxemias of Pregnancy," Blair "Cancer of the Face and Mouth," Thewlis "The Care of the Aged," Willius "Mayo Cardiac Clinics," Top "Handbook of Communicable Diseases," Tassmann "Eye Manifestations of Internal Diseases," Mettler "Neuroanatomy" and Alexander "Synopsis of Allergy." New editions will include Crossen & Crossen "Diseases of Women," Porter-Carter "Management of the Sick Infant and Child," Marriott-Jeans "Infant Nutrition," Hermann "Synopsis of Diseases of the Heart and Arteries," and Dodson "Synopsis of Genitourinary Diseases."

V. MUELLER & COMPANY, Booth 55

Despite the demands of our unprecedented offense effort, priority restrictions and shortages in materials, the exhibit of V. Mueller & Company (Chicago) will include several new developments in fine surgical instruments and equipment. A representative selection of the complete line will also be shown. The display will be in charge of Mueller Representatives, F. M. Harmer and Chester I. Lovested.

NUTRITION RESEARCH LABORATORIES, Booth 35

This exhibit shows by means of x-rays, transparent photographs, and wax models, the important types of chronic arthritis. The beneficial effects producted by Ertron in rheumatoid, osteoarthritis, and gout, are described in scientific publications which are available for free distribution.

The therapeutic advantages of Bezon, a whole natural vitamin B complex, are also depicted.

Pendron will be introduced to the profession at this meeting. Because the army recruiting stations and governmental agencies have found that human deficiencies are very common and multiple in nature, the availability of Pendron, which contains all of these vitamins in adequate amounts, is of vital interest at this time in preventing and combating the cause of so much disability.

PARKE, DAVIS & COMPANY, Booth 54

Featured in the Parke-Davis Exhibit will be the sex hormones, Theelin and Theelol; antisyphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various Adrenalin Chloride Preparations.

PET MILK COMPANY, Booths 21 and 22

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Milk Company in Booths No. 21 and No. 22. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk Booth.

PETROGALAR LABORATORIES, INC., Booth 7

This year Booth No. 7 will be occupied by Petrogalar Laboratories, Inc. who offer, in addition to samples of the Five Types of Petrogalar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrogalar representatives to show you the HABIT TIME booklet. It is a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & CO., LTD., INC., Booth 13

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

W. B. SAUNDERS COMPANY, Booth 11

This publishing house will exhibit a great number of new books and new editions that will be of unusual importance at this time to those attending the 1942 Meeting. They will include the first of the Official Military Surgical Manuals dealing with Maxillofacial Surgery, Duncan's "Metabolic Diseases," Johnstone's "Occupational Diseases," Steinbrocker's "Arthritis," a new Beckman's "Treatment," a new Christopher's "General Surgery," the "Surgical Practice of the Lahey Clinic," Walters, Gray & Priestley's "Gastric Carcinoma," advance sheets of Lundy's "Anesthesia," and the 1942 Mayo Clinic Volume.

SHARP & DOHME, Booth 24

Sharp & Dohme will have their new modern display at Booth No. 24 this year, featuring 'Delvinal' Sodium, 'Lyovac' Normal Human Plasma, 'Lyovac' Bee Venom Solution, and other 'Lyovac' biologicals. There will also be on display a group of biological and pharmaceutical specialties prepared by this house, such as 'Propadrine' Hydrochloride products, 'Rabellon,' 'Padrophyll,' 'Riona,' 'Depropanex,' and 'Ribothiron.' Capable, well-informed representatives will be on hand to welcome all visitors and furnish information on Sharp & Dohme products.

SMITH, KLINE AND FRENCH LABORATORIES, Booth 19

We again welcome the opportunity of displaying our products, including Benzedrine Inhaler, Benzedrine Sulfate Tablets, Paredrine Aqueous and Pentnucleotide, to the members of the Society. Our representative will be only too glad to discuss the products exhibited and will endeavor to answer any questions that may arise concerning them.

E. R. SQUIBB & SONS, Booth 26

E. R. Squibb & Sons, located in Booth 26, will endeavor to convey scientific and pertinent information about some of their most important products by striking visual methods. Numerous photographs, charts, and demonstration packages will graphically point up the important features of these products, among which will be included new additions to their Vitamin, Glandular and Specialties lines.

Well informed representatives will be on hand, moreover, to welcome visitors and to furnish further information on the products displayed.

FREDERICK STEARNS & COMPANY, Booth 46

Doctors are cordially invited to visit our attractive convention booth to view and discuss outstanding contributions to medical science developed in the Scientific Laboratories of Frederick Stearns & Company.

Our professional representatives will be please to supply all possible information on the use of such outstanding products as Neo-Synephrin Hydrochloride for intranasal use, Mucilose for bulk and lubrication, Ferrous Gluconate, Potassium Gluconate, Gastric Mucin, Susto, Trimax, Appella Apple Powder, Nebulator with Nebulin A, and our complete line of Vitamin products.

SUTLIFF & CASE CO., INC., Booth 24

Sutliff & Case Co., Inc., of Peoria, Illinois will have on display the original Thiocyanate Pharmaceuticals for judicious Thiocyanate Therapy in the treatment of Arterial Hypertension. The display will include:

Thio-Cara, an aromatic liquid preparation containing a therapeutic dose of potassium thiocyanate; it also contains aromaticized cascara to induce elimination — so often essential in treating arterial hypertension.

Thiocyan Tabs, a calcium derivative of the thiocyanate, specially coated.

Potassium Thiocyanate Tablets, 1½ grain and 3-grain specially coated.

The Blood Thiocyanate Test Kit — for the estimation of the Thiocyanate (Sulfocyanate) level of the blood. A practical modification of Barkets' method.

*Journal A. M. A., 106 (March 7th, 1936), 726

These worthy Thiocyanate preparations have been supplied to the medical profession over a period of many years with numerous gratifying results reported.

WHITE LABORATORIES, INC., Booth 33

White's Cod Liver Oil Concentrate will be presented in Booth 33, for your consideration. Here you may obtain complete information concerning the entire field of cod liver oil concentration, with clinical data substantiating the efficacy of White's Liquid, Tablet and Capsule Concentrates.

Qualified representatives and descriptive literature, including reprints and excerpts from medical literature, will further direct attention to the contribution of White Laboratories in the Vitamin A and D Field.

White Laboratories holds an established place as one of the world's most extensive users of cod liver oil for pharmaceutical purposes and is the world's largest manufacturer of cod liver oil concentrates.

All physicians are cordially invited to visit the booth.

WINTHROP CHEMICAL COMPANY, INC., Booth 32

The Winthrop Chemical Company, Inc. extends a cordial invitation to visit booth 32, where representatives will gladly discuss the latest contributions made by this firm to the medical profession.

JOHN WYETH & BROTHER, Booth 10

You are cordially invited to visit Booth No. 10 where John Wyeth & Brother will exhibit its HEMO-GUIDE — an aid to hematologic diagnosis. Copies of the HEMO-GUIDE will be available for doctors who wish them, and our representatives will be happy to show how it assists in diagnosing types of anemia.

Among the specialties to be displayed will be —

AMPHOJEL — Wyeth's Alumina Gel for the management of peptic ulcer.

BEPRON — Wyeth's Beef Liver with Iron for the nutritional anemias.

B-PLEX ELIXIR — For the administration of the complete vitamin B complex.

BEWON ELIXIR — The palatable appetite stimulant.

KAOMAGMA — For the control of diarrhea regardless of etiology of the condition.



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Original Articles

THE KENNY TREATMENT OF INFANTILE PARALYSIS DURING THE ACUTE STAGE

PHILIP LEWIN, M.D.
Associate Professor of Bone and Joint Surgery,
Northwestern University Medical School
CHICAGO

OUTLINE

I. Introduction — General Discussion — Sources of my Material
II. Kenny Theory and Practice — Terminology — Pathologic Changes — Basis for Treatment
 A. Examination — Muscle Analysis
 B. Immediate Treatment
III. Hospital Unit for Kenny Treatment.
 A. Personnel
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 A. Objectives
 1. Abolition of muscle spasm
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 3. Restoration of muscle coordination
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 1. Position of rest in bed — Foot Board
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V. Kenny's Results, as reported
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VI. Comparison of results by various methods
 ?? Controlled Studies ??
VII. Teaching the Kenny Method — Manual
VIII. Illustrations

With a full realization that the Kenny treatment of Infantile Paralysis has received sufficient indorsement of the medical profession to justify its general employment in order to properly evaluate its efficacy, I hereby present a concise description of the theory and especially the practice during the acute stage of this dreadful disease.

Miss Elizabeth Kenny, an Australian nurse claims that she has proved that the clinical picture of infantile paralysis is the opposite of that generally accepted. Her method of treatment is diametrically opposed to previously accepted methods. So far as I have been able to discover, it is original.

Miss Kenny predicates her theory on the belief that the basic harmful factors in infantile paralysis are pain, muscle spasm, mental alienation and muscle incoordination. She believes that muscles which were formerly supposed to be flaccid, are for the most part, stretched from their normal resting positions by the abnormal condition of spasm in the primarily affected muscles. Her treatment begins immediately upon making the diagnosis. It is aimed at the abolition of pain and muscle spasm which are evidently the root of all peripheral poliomyelitis

This is a condensed copy of a presentation made before the Pediatric and Orthopaedic Surgery Staffs of Cook County Hospital, Chicago, March 24, 1942. Lantern slides and movies supplemented the paper.

evil. This is accomplished by hot fomentations and proper rest positions, without benefit of splints. Her system of muscle reeducation is based upon the substitution of "mental awareness" for the pathological "mental alienation," and the restoration of coordination of muscle activity. She says her method consists of 70% nursing and 30% physical therapy.

As progressive medical men, our aims are: 1. to ascertain facts, 2. to learn how to apply them, 3. to keep the medical profession informed (a) by obtaining accurate information as soon as possible, (b) by disseminating that information among the medical profession immediately.

We cannot accept nor reject Miss Kenny's work and theory "in toto," at this time, but we want to know: 1. What are the facts? 2. What we are going to do with the facts?

We want to put all the facts before the medical and allied professions before they read any more quasi-medical publications.

American Medical men demand scientific proof rather than clinical observations. At the moment they will have to be satisfied with the latter. Who knows exactly how quinine cures malaria, or precisely how the sulfonamides cure infections? Parents of polio-children say "from the practical point of view, who cares?"

Articles in lay magazines have given descriptions of the historical aspects of Miss Kenny and her methods, the personal attributes of the woman, her vicissitudes and her triumphs. Most of the profession refused steadfastly to accept the fact that the Kenny method was either different, or in fact, of any value*

Before I visited Miss Kenny in Minneapolis I had been asked by a large number of persons to give them the facts about her treatment. Since I returned I have been asked by many more. I shall devote most of my attention to the acute phase of the disease.

My position in the Kenny matter can be summed up as follows:

1. Let us find all the good there is in the method and employ it, in the interest of the largest number of patients possible.
2. Let us give Miss Kenny her just recognition and reward.
3. Let us keep the subject within normal bounds.
4. Let us protect the children who now have, have had, or will have poliomyelitis.
5. Let us protect the method against exploitation.
6. Let us protect the public against the misuse and abuse of the method.
7. Let us educate every person concerned: viz; the family doctor, the pediatrician, the neurologist, the orthopaedic surgeon, the physical therapist, the nurse, the public health nurse, the public, the patients and their relatives.

I wish to sound a warning in regard to cultists, charlatans and unqualified practitioners who will advertise, promise results they cannot produce and guarantee cures indiscriminately. This group includes fakers, quacks, and certain unscrupulous persons who capitalize on, and exploit human suffering.

My exposition is based upon many sources and has gone through the clearing-house of time, experience and debate. My material is a composite of personal conversation with and letters from Miss Kenny, several of her addresses, her books and my personal contact with her and her associates who include American doctors and Australian and American physical therapists and nurses.

Miss Kenny personally showed me movies of her method. I gleaned much from her trained personnel, especially the Australians and several observers. The whole list included Doctors Cole, Knapp, Pohl and Krusen, Miss Mary Stewart Kenny, Mr. Bill Bell, Misses Harvey, Daniels, Plastridge, Stevenson and Johnston.

My personal experience with the application of the method was obtained at Cook County and Michael Reese Hospitals, Chicago.

Dr. Melvin S. Henderson made the introductory arrangements for Miss Kenny's visit to Minneapolis and the interview with Doctors Wallace Cole and Miland Knapp, Professors of Orthopaedic Surgery and Physical Therapy respectively, the College of Medicine, the University of Minnesota. The program was made possible by the good offices of Mr. Basil O'Connor, Presi-

*It is interesting to refer to the Principles and Practice of Physical Therapy — Volume 2, Chapter 8 — page 5 — by Legg and Merrill.

dent of the National Foundation for Infantile Paralysis, New York City. Doctors Morris Fishbein, Irvin Abell, and Don Gudakunst and Mr. Peter Cusack were advisors to the Foundation.

At the personal invitation of Miss Kenny I went to Minneapolis and saw her work, firsthand.

It is a revelation to see the meticulous care used in Kenny's demonstrations especially of the muscles and movements (1) in and around the neck and shoulder, (2) in and around the hip, (3) in the back.

Her theory which is a complete reversal of previously accepted thought, has given a tremendous stimulation to further study, observation and research in the field of poliomyelitis and has made many of the leaders of the medical profession "sit up and take notice." It is urgent that we make a revision of our concept of the best physical treatment during the acute stage of the disease. This does not mean that our knowledge of the cause, pathologic changes and diagnosis should be modified nor does it mean that the status of convalescent serum is modified in the minds of some authorities. Our surgical attack on the residual effects of the disease will be strikingly reduced. Miss Kenny's results speak for themselves. Let me emphasize the fact that it is impossible to carry out the Kenny method without prolonged personal observation of her work, and an intensive study of her method. It cannot be done from the printed sources now available.

The method will be used on an empirical basis, at the moment.

As scientific men we always return to the question of a scientifically controlled study, of any form of treatment.

The whole matter of comparable cases in poliomyelitis appears at the moment to be a scientific myth. There are so many variable factors. There are variables even in siblings. Not even twins are comparable in poliomyelitis.

The chief points in treatment are that Miss Kenny employs hot fomentations and muscle reeducation but does not use splints, respirators, braces or massage.

One of Miss Kenny's contributions is the direction of attention of the medical, nursing and physical therapy professions to the importance of treatment during the acute stage of the disease.

The Kenny system is the reverse of traditional treatment. She categorically refuses to entertain any thought of compromise or combination of methods.

Kenny has proved that not only is her treatment the opposite of that previously accepted, but the symptoms presenting themselves in patients afflicted with the disease are also the opposite.

The maximum benefit to be derived from the Kenny Method is predicated upon its application immediately after the disease is diagnosed. This means that the treatment should be started during the quarantine period either in the home or in the isolation ward of a hospital. The slogan is evidently "you can't do business with spasm," paraphrased to read "you cannot reeducate muscles that are compelled to work against their opponents that are in a state of spasm."

She never employs massage and she never uses a splint of any kind, or a respirator. She never permits active or passive exercises of a muscle that is still in spasm.

In his report to the National Foundation for Infantile Paralysis on December 4, 1941, and again on January 14, 1942, before the American Academy of Orthopaedic Surgeons, Dr. Wallace Cole stated that he and his colleagues in the Twin Cities of Minnesota were enthusiastic about Miss Kenny's treatment, and were absolutely certain that it was the best of all methods. He emphasized the fact that the treatment should start the day the diagnosis is made.

At the meeting of the Medical Advisory Committee of the National Foundation for Infantile Paralysis held in New York in December, 1941, consideration was given to reports on the Kenny treatment. After the Committee on Research for the Prevention and Treatment of After-Effects, heard the reports from various authoritative clinical medical observers on their investigation of the subject, it adopted the following statement:*

"The National Foundation for Infantile Paralysis has supported studies of the Kenny technic under the auspices of the medical school of the University of Minnesota and specifically under the direction of the Department of Ortho-

*J.A.M.A., Dec. 20, 1941
The Foundation News — Vol. I, No. 2, Dec., 1941

pedic Surgery. The Minneapolis General Hospital was chosen for these studies as beds were available and the necessary supervision was possible by members of the orthopedic staff and the Physical Therapy Department of the University of Minnesota.

"Since June, 1941 work on the Kenny treatment of infantile paralysis during the early stage has been going on at both the University Hospital and the Minneapolis General Hospital under the personal supervision of Miss Kenny. Most of the physical therapists of the Twin Cities and many from elsewhere have been working with Miss Kenny and acquiring a knowledge of her methods. The course for physical therapy technicians at the University of Minnesota includes training in the Kenny Method.

"The director of the Physical Therapy Department at the University Hospital and the Minneapolis General Hospital, aided by funds of the National Foundation for infantile Paralysis, is making a detailed study of the method so that he and others may be able to continue with the teaching after Miss Kenny and her staff return to Australia.

"It is the opinion of the Committee on Research for the Prevention and Treatment of After-Effects of the National Foundation for Infantile Paralysis, after a study of the report of the workers at the University of Minnesota, that during the early stage of infantile paralysis the length of time during which pain, tenderness and spasm are present is greatly reduced and contractures caused by muscle shortening during the period are prevented by the Kenny method. The general physical condition of the patients receiving this treatment seems to be better than that of patients treated by some of the other methods during a comparable period."

Following this action, the Committee on Epidemics and Public Health and the Committee on Education, of the National Foundation for Infantile Paralysis, aware of the implications of the foregoing statement as it relates to the application of the Kenny method in the early stage of infantile paralysis issued the following:

"Health officers and physicians, including especially pediatricians, now have the responsibility of early recognition of cases of infantile paralysis and the prompt application of appropriate nursing technics and physical methods to these patients.

"During the past year the Kenny method has been observed with the aid of the National Foundation in several well recognized medical institutions. For best results this method involves care and the use of special skills under qualified medical supervision.

"The Committee on Epidemics and Public Health and the Committee on Education recommend to the National Foundation for Infantile Paralysis that public health officials throughout the nation be given as promptly as possible information which may be available regarding the nature of the Kenny technic and its integration with other measures of treatment, and the personnel available for its application in outbreaks of infantile paralysis.

"The Committees recommend furthermore that the training program of the National Foundation for Infantile Paralysis be expanded to provide additional training for considerable numbers of nurses and physical therapy technicians, and recommend expansion of the training program so as to make available additional personnel fully trained in the essentials and principles of the Kenny method.

"The Committees recommend furthermore that the Committee on Medical Publications of the National Foundation for Infantile Paralysis consider immediately the development of a concise manual providing the essential principles and details of the Kenny method and of other applications of hydrotherapy and physical treatment in the early stage of infantile paralysis.

"The Committees recommend that state health departments, health officials in larger communities, and other official agencies concerned with the care of infantile paralysis also develop a program to train personnel in the application of the Kenny technic in conjunction with other early treatment of infantile paralysis."

I shall describe her theory based on her book and on personal talks with Miss Kenny and her trained assistants. Drs. Cole, Pohl, Knapp and many others have furnished much information.

Miss Kenny describes her theory on the basis of 4 main signs and symptoms, viz: 1. Pain, 2. Muscle Spasm, 3. Mental Alienation, 4. Muscle Incoordination.

Unfortunately these terms denote meanings that are not readily understood by American doctors, physical therapists or nurses. My interpretation of them is as follows:

MUSCLE SPASM: means a physical condition of a skeletal muscle, characterized by tenseness, firmness, tautness, prominence, tenderness, and pain upon being put on the stretch, because of its incomplete relaxation.

MENTAL ALIENATION which occurs in the flaccid muscles, means the abnormal condition which permits or determines a physiological but not an organic interruption of continuity of impulses between the central nervous system and the skeletal muscles.

INCOORDINATION means the unphysiological condition which predisposes, permits or determines the substitution of muscle action by one muscle for the one which normally performs that certain movement. It is a physiologic interruption or paradoxical innervation, producing a "twist" in neuromuscular function.

Kenny claims that the affected muscle in acute poliomyelitis is the "muscle in spasm." She claims that what has been called the flaccid muscle is the "alienated " muscle. She believes that muscle spasm is a constant accompaniment of the muscle pain and that it may be the real and sole cause of pain. An alienated muscle atrophies even though it is the normal muscle; thereby causing flaccidity.

She claims to have proved that the painful muscles are the muscles in spasm and are the ones primarily affected by the disease; they are shortened through spasm and eventually become hard, inelastic masses, paralyzing their opponents from disuse, providing they, too, are not in a state of spasm and shortening.

Kenny states the term spasm is used when there is a series of contractions felt in the part or incoordinate contraction of the part. A contraction is a condition of unrelaxed shortening, which if taken in time, can be relaxed passively. It is without exaggerated tonus and may relax during sleep. A spasm however, will not relax while the patient is asleep.

Mental alienation disappears when the correct treatment is given and permanent paralysis is avoided when the condition of incoordination has been attended to, accompanying the treatment for alienation. "Proprioceptive re-education" as early as possible is also an important factor in her treatment. The presence of the foot board placed at the bottom of the bed retains the "standing reflex" for future use. The spasm in the acute stage of poliomyelitis, is responsible for the major part of the deformities and apparent loss of power in muscles.

Unaffected opponent muscles are stretched beyond their normal relaxation. It is impossible for them to contract, as it is impossible for the muscles in spasm to relax and take up the slack. It is impossible for the overstretched muscle to pull from its point of attachment. The "brake" that is caused through the over-contracted opponents will not allow this muscle to contract.

The detection of incoordination and its immediate treatment minimizes the length of treatment and restores rhythmic muscle action. If the acting and opposing muscle groups are attempting to contract together, all efforts of contraction in either group are discouraged until the basic condition is overcome.

The combination of unattended spasm in the affected muscles and the neglect of the consideration of (1) receptor, or peripheral apparatus which receives stimulation, and (2) the proprioceptor, or apparatus which receives stimulation within the tissues of the body, cannot be expected to be successful where mental alienation is a prominent symptom.

Miss Kenny's chief claim is that the "muscles in spasm" are the muscles primarily affected by the disease. While the condition of spasm produces harm in the painful muscle affected by the disease, the opposing group is mentally alienated, therefore will not contract and very frequently becomes paralyzed from disuse.

She also claims that in 100 per cent of cases, stiffness or muscle shortening caused through muscle spasm is present from the onset of the disease. She believes that spasticity is the prelude to flaccidity and that spasm is the precursor of paralysis. An apparent joint stiffness is in reality unrelaxed muscle contractions caused by unreleased spasm. As evidence of the paramount importance ascribed to muscle spasm, I call your attention to the fact that Miss Kenny divides the disease into two stages: (1) Acute: while pain and spasm are present; (2) Convalescent: after pain has been relieved and spasm eliminated.

The most frequently overlooked "muscles in spasm" that produce harm in one area around the shoulder and neck, are the pectoralis major, the trapezius and sternocleidomastoid; and secondly around the hip, the iliacus, sartorius, gluteus medius and tensor fasciae latae. In the calf and foot, the greatest harm done by "muscles in spasm," is caused by the gastrocnemius. In the back the greatest harm is done by the erector spinae muscles.

Miss Kenny's theory of the situation in acute anterior poliomyelitis is manifested by the presence of:

1. Pain.
2. Muscle spasm.
3. Muscle incoordination, due to pain and the substitution of muscle function.
4. Mental alienation in which state the patient loses the faculty of performing normal muscle function.

Her treatment is aimed at:

1. The abolition of muscle spasm.
2. The substitution of mental "awareness" for the pathological "alienation."
3. The restoration of coordination of muscle activity.

Her treatment includes:

1. Proper bed placement — natural rest position.
2. A foot board to preserve the "standing reflex."
3. Hot fomentations to relieve pain and muscle spasm.
4. Special analysis, classification and reeducation of muscles.
5. Passive movements.
6. Concentration of active movements on the insertions of muscles and tendons.
7. The abandonment of all splints, respirators and artificial feeding.

The most common symptoms presenting themselves in the acute stages are muscle spasm and incoordination.

She claims that fixed foot-drop is not caused through paralysis of the anterior group of muscles, but a spasm in the posterior group. Muscle spasm produces a brake by the shortening of one muscle, which prevents its overstretched opponents from contracting physiologically and thereby becoming alienated.

If spasm is neglected a contracture will be established causing deformity,

If, for example, the psoas muscle is allowed to remain in spasm or contraction until a contracture is produced a seriously exaggerated lumbar lordosis will occur, especially when the lower limbs are immobilized in the position of abduction.

She describes and repeatedly demonstrates a furrow in the back of the neck due to spasm of the regional muscles. She calls attention to a furrow or crease in the region of the pectoralis major tendon as evidence of spasm.

There is no doubt that Kenny is guided to a considearble degree by the basic concept of Sherrington's Reciprocal Innervation.

There is no doubt that hot fomentations are of definite value. Regardless of the explanation, the fact remains and the proof will take second place, for the time being.

Muscle spasms or muscular contractions occur from the onset both in the affected muscles and in other groups not similarly affected, e.g., the antagonists and synergists. They are generally accompanied by pain and in Kenny's opinion, are due primarily to ischemia. Persistence of this condition leads to general stiffness and permanent shortening in affected limbs with attendant deformities and loss of volitional control.

The spastic condition is aggravated through skin reflexes by any factors which cause ischemia, increased excitability or increased tone in the muscles. The attempt on the part of the patient to control pain increases the hypertonicity. Pain is a symptom in all stages of the disease and arouses in the patient considerable fear of its occurrence. He attempts to control it, therefore, by tending to immobilize himself and lies rigid in bed, frightened to move or permit anyone to move him.

Spasm can be regarded as due to several causes, viz: (a) attempts at voluntary movement, (b) reflex activity, (c) attempt of the patient to control pain by immobilizing himself.

An article in the International Bulletin published by The National Foundation for Infantile Paralysis, lends much weight to Miss Kenny's theory. According to Haggquist a number of research workers have described cases of spastic paresis as a result of acute poliomyelitis

(Strumpell 1885, Medin 1896, Pasteur 1897, Bucelli 1897, Williams 1899, Neurath 1901, Marie 1902, Hoffmann 1904, Negro 1905, Spieler 1910 and Wernstedt 1917). In certain cases the spastic paresis appears as the only form of paralysis, or in combination with a flaccid paralysis. It is due in certain cases to a form of cerebral infection, when the spasticity may be combined with an aphasia (Wernstedt), or to the infection having attacked the pyramidal tract within the spinal marrow.

PHYSICAL EXAMINATION

Kenny's Physical Examination is aimed at the discovery and location of Pain, Muscle Spasm, Alienation and incoordination. The detection of muscle spasm is of paramount importance. For instance, a spasm in the medial head of the gastrocnemius will cause a supinated heel and a spasm in the lateral head will cause an abducted heel. When the heel is out of balance a foot deformity must follow. A contraction of the tensor fasciae latae and its sheath produces a tense band which can be felt in the lateral and anterior aspects of the upper portion of the thigh. This causes flexion and rotation at the hip joint.

In her muscle analysis, the most important considerations to determine are: 1. Which muscles are in spasm, 2. Which muscles are alienated, 3. Which muscles are incoordinated.

Classification and Synchronization of Muscles. — Before undertaking any action in the restoration of muscle function, a thorough knowledge of the classification and synchronization of muscles is imperative. Spasm, incoordination and mental alienation must be overcome before a suitable contraction can be obtained in the muscle affected by any of these symptoms.

Muscle Classification. — Having combatted the conditions of spasm, incoordination and mental alienation, the next consideration is the accurate classification of the muscles of the neck, upper limbs, trunk, back and lower limbs.

For many years many general practitioners, pediatricians and neurologists were of the opinion that the orthopedic surgeon should not be called in on a case of infantile paralysis until the quarantine period was over. It is during this period however, that Miss Kenny does her most constructive work.

Space does not permit a discussion of several important questions, such as, whether muscle spasm is of central or peripheral origin; whether spasm is of inflammatory, toxic or anoxemic origin; the relation of muscle fasciculation to massive fibrillation; the peripheral circulatory factor; the relation of acetyl choline to the myoneural junction or end-plate; the relation to fatigue; the effect of decreased blood flow on the acetyl choline content; the influence of potassium ions; the question of organic paralysis vs. pseudo-paralysis; the pathologic changes in or around the sympathetic nerve ganglia; the importance of the "cooling off" process between applications of the hot fomentations.

Miss Kenny makes a big point of the restoration of non-functioning or non-paralytic muscles. She implies that her method is "all or none." She has done much for the medical and allied professions as well as for the victims of infantile paralysis and their relatives.

Her technic can be outlined as follows:

I. Proper bed placement — natural rest position.

II. A foot board to preserve the "standing" reflex, i.e., to maintain and stimulate the plantar reflex.

III. Hot fomentations to relax muscle spasm. In some cases every half hour; in others every 2 hrs. from 8 A.M. to 8 P.M. In some cases during the night also, depending upon the severity of symptoms, especially pain. The packs do not cover the large joints.

IV. Special analysis classification of muscles. Determination of spasm, alienation and incoordination.

V. Reeducation of muscles, concentrating on insertions of muscles and tendons. Active and passive movements as complete as comfort permits. Muscle stimulation: a passive manual extension of muscle is given in connection with reapplication of packs. This is an important procedure. Passive exercises are given twice daily as pain will permit, after the first few days.

VI. The avoidance of fatigue.

VII. The abandonment of all splints, respirators and artificial feeding. Difficulty in breathing is caused by spasm in muscles used in

respiration (except bulbar cases) which may be relieved by packs. Patient must be taught to breathe properly.

HOT WET PACKS

Hot wet packs are applied to all "muscles in spasm."

Woolen strips saturated with boiling water for 20 minutes, are taken out of the sterilizer or other container, with forceps and run through a wringer twice so they are practically dry.

The fomentations are boiled in a sterilizer and are then lifted out with forceps and placed in a mobile tub, under a piece of waterproof sheeting. The tub is wheeled to the patient's bedside where everything has been placed in readiness. The nurse lifts the fomentation with forceps and runs it quickly twice through the wringer attached to the tub and applies it to the area to be treated. (figure 1.) They are applied very quickly from one joint to another, but not over the joints because that would enclose tendon insertions. These dressings are protected with oiled silk and covered with dry warm wool. They may be changed every half hour during the first 24 and 48 hours. This routine is continued 24 hours a day in some cases.

After the extremely sensitive period has passed, the procedure is carried out every two hours from 8 A.M. to 8 P.M. A two-person team is very efficient. A small roll of towel material is placed under the knees. The "proprioceptive nerve center" area should not be covered during the night, as long as there is spasm in the muscles.

In the very acute cases where the patients are seriously ill, the foments are changed as fast as they cool. Her principle is that the foments are put on very hot, and remain hot for 15 minutes. They gradually cool down, and that cooling process is good for the muscles and nerves.

During the treatment with fomentations the patients should drink much water.

APPLICATION OF FOMENTATIONS TO SPECIAL REGIONS

Fomentations Applied to Thighs. — Two lengths of cotton-wool, long enough to embrace the thigh, are applied and covered with a piece of waterproof material.

A quarter of a single woolen blanket is soaked in hot water and twice wrung quickly through an ordinary laundry wringer. The cotton-wool with cloth is then brought around the fomentation. Finally, the outer ends of a towel are brought over the limb, and tucked under the medial surface and underneath the thigh. It does not require bandages to secure the fomentation in position. The same technic is adopted for application to the arms or trunk.

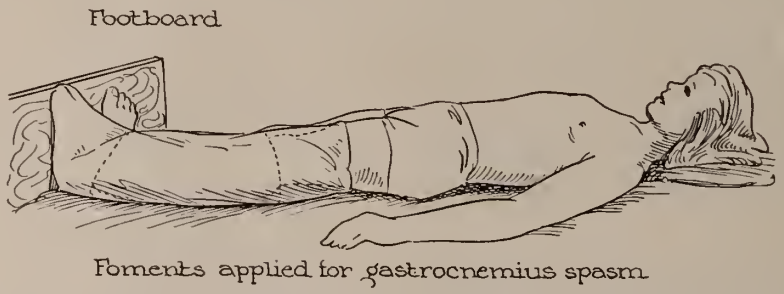


Figure 1. — Hot fomentations applied for gastrocnemius spasm. Dotted lines indicate extent of applications, covered by rubber sheeting and binder.

The quarter single blanket is wrung through the wringer, and the first corner placed at the origin of the glutei, the opposite corner forming an angle — that is the third corner of the blanket is taken over the back of the knee. (figure 2.)

Application of Fomentations for Painful Abdominal Spasm. — It is necessary to shorten the muscle a little by flexing the thigh at right angles to the body, and to flex the leg at right angles to the thigh supporting it in this position, and then to treat the muscle spasm by the application of hot fomentations. (figure 3.)

A bed cradle with a flat top is placed over the

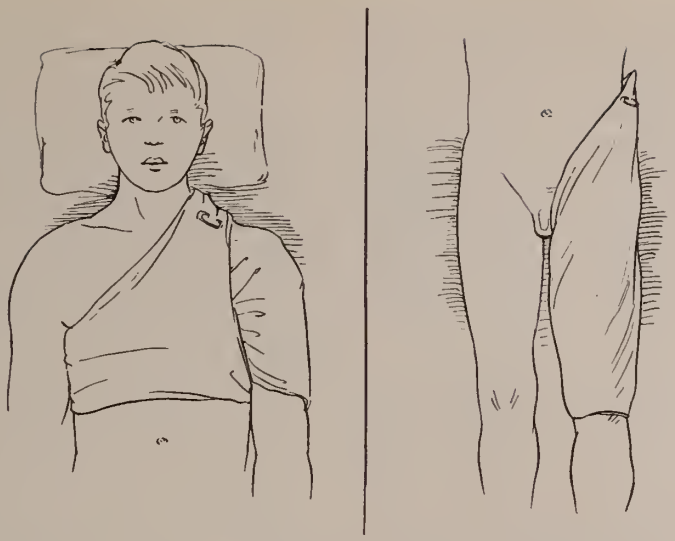


Figure 2. — Left — fomentations applied to chest and left shoulder and arm. Right — fomentations applied to left hip and thigh.

body of the patient, and hot water bags placed on the top of the cradle as well as in the pockets attached to the sides. (When electricity is available an even temperature can be maintained with an electric bulb.)

When an abdominal spasm remains obstinate, and is likely to become chronic, a coat of paraffin wax of low grade melting properties, between 36° and 40° centigrade is effective. The reflexes become more normal when the wax is removed.

POSITION OF NATURAL REST IN BED

Upon admission to the hospital, the patient is placed upon a rigid bed to keep the body in correct alignment. Boards are placed under the mattress, a board is placed at the foot of the bed to maintain the sensation of contact, both in the recumbent and erect positions, and to re-establish the normal standing reflexes which are comparable to the "Stutz" reflex in other animals, that is, the inducement of the normal contraction of all standing muscles when the sole of the foot comes in contact with a hard surface. It is not used while there is painful spasm of the posterior leg muscles.

A small pad is placed under the knees and sometimes a padded roll is used to prevent the

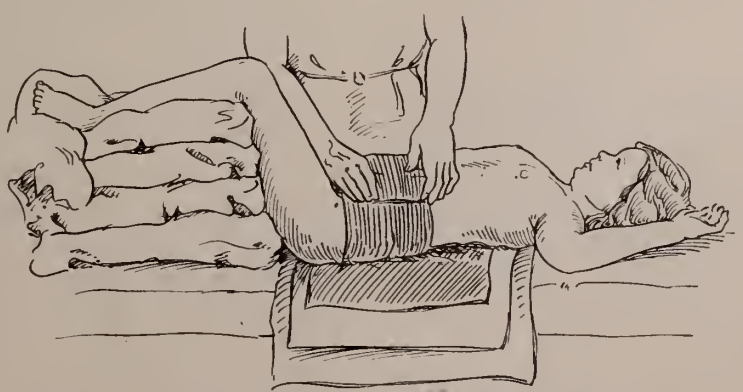


Figure 3. — Hot fomentations for abdominal and low back "muscles in spasm." Note flexion of thighs to relax psoas muscles.

legs from rotating outward. Patients are turned to the prone position for an hour twice a day. In the face-lying position the feet are placed over the foot of the mattress so that they are at right angles to the lower part of the leg and the toes are in the clear. The side-lying position is not permitted. The arms remain at the sides of the body. A pillow for the head is permitted and, after coordination has been reestablished, the patient is allowed freedom of movement in bed.

In addition to keeping a neutral position the foot pressure against the board serves to preserve the patient's feeling of normal contact with the floor so that when they are permitted to stand up the sensation will not have been lost. She never allows anything to rest against the outer aspect of the leg which would seem like a splint because it would interfere with the proprioceptive reflexes.

The mattress is pulled up toward head of the bed and a flat foot board is placed at the foot with a space between it and the mattress. The patient's feet rest firmly against it at right angles with a free space under his heels. A towel or blanket is placed under the knees and tucked under the knees — preventing hyperextension of knees and external rotation of legs. Patients are not allowed to twist or roll or use hands or arms, if shoulders, arms and abdominal muscles are involved.

The limbs should be allowed to remain in their natural positions between exercises. This position is approximately the position of the body when a standing pose is maintained with the feet slightly apart and the hands at the sides. In this position all muscle fibers are practically at rest, with no undue stretching or contraction.

When the limbs are placed in the posture they usually occupy, they are in the "zero positions" from which a range of movements in various directions may be accomplished.

The posture described is maintained, as far as possible, for the major portion of the twenty-four hours. A prone position is substituted for periods of one hour during the daytime.

To prevent prolonged maintenance of one posture, the patient is turned over at intervals and lies prone with his feet over the end of the mattress. Patients who have been alternately turned from the supine to the prone position, do not develop visceral complications. All pressure, especially on bony points, is carefully avoided. The heel should not rest on the mattress. The wards in which these patients are placed are kept unusually warm (which is trying on the nurses and physical therapists).

She treats her bulbar cases by hot fomentations to the back of the neck and to the pectorals, around the neck and covering the sternocleidomastoids.

In regard to the respirator Kenny states: "In my experience, I have failed to see where the respirator is of any benefit and it may in many instances debar the patient from making a satisfactory recovery." She describes her procedure in one case. "We then proceeded to endeavor to restore the brain path. The patient was requested to inhale and expand the thorax, and exhale and contract the intercostales interni, the attendant assisting by gently depressing the floating ribs in the latter movement. In less than half an hour the patient's breathing had improved, and within two hours it was considerably easier and much less rapid. Continuous hot packs were applied to the full length of the spine and renewed constantly whenever the patient complained of their feeling cold. This varied from five minutes to half an hour for the first four hours. The patient was placed in any position she desired."

MUSCLE REEDUCATION

A. Objectives
 a. To overcome mental alienation
 b. To establish coordination

B. Methods of muscle reeducation to produce normal functional activity
 a. Relaxation — "Dead Dog" policy — Do nothing
 b. Muscle stimulation
 c. Passive movements and exercises
 d. Directed active movements and exercises

Reeducation is her method of teaching the patient mental concentration. Her emphasis on maintaining normal muscle rhythm and developing coordination from the beginning of treatment, merit much commendation. (figure 4.)

Later treatments include: Physiological stimulation of muscles; Concentration of attention and effort on the insertion of muscles; Avoid-

ance of substitution of muscle power.

MENTAL AWARENESS

Kenny believes that the subconscious mind will reconstruct and rearrange itself to accept all changes as permanent, and deliberate, thereby establishing a condition of incoordination. For example, when abduction is desired, the adductors will contract and attempt to assist in abduction. To prevent this substitution of muscle function the patient is directed to focus his mind on the point of insertion of the muscle or tendon to bone.

All hinge joints are stabilized by muscles coming under the second classification, i.e., muscles that are removed from their normal resting length before a satisfactory contraction can occur. For instance, the psoas muscle will flex the thigh forward. The head of the femur is rotated backward. On the other hand, to rotate the head of the femur forward, the hamstrings will lift the thigh and leg in extension and support it.

The quadriceps must be removed from its normal resting length to allow it to contract and perform a useful movement and stabilize

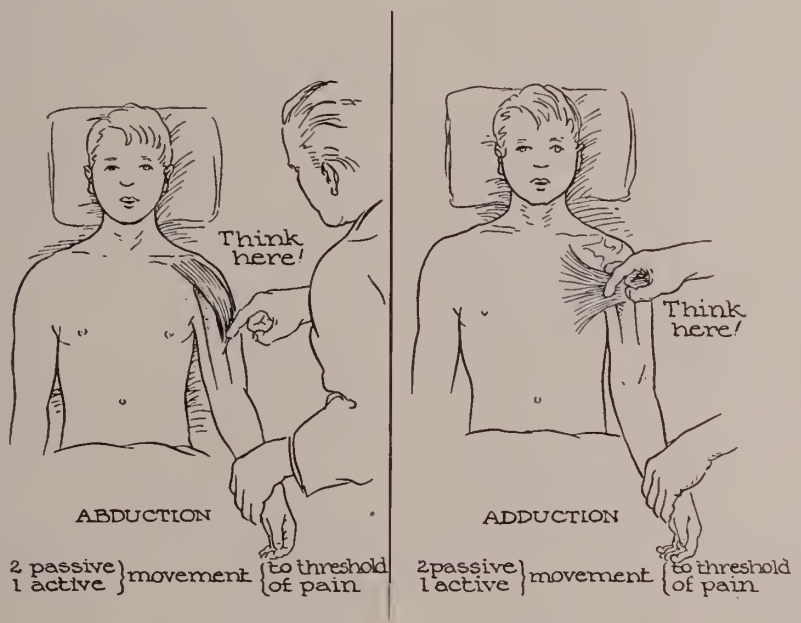


Figure 4. — Muscle reeducation. Left — for deltoid. Right — for pectoralis major.

CLASSIFICATION OF MUSCLES

In the classification of muscles according to the Kenny system, all muscles causing inward rotation of a joint contract within their normal resting length to perform this action. Therefore, to shorten them means an eventual limitation of this movement, either in flexion (the psoas muscle) or abduction (the gluteus medius) in the lower limbs, or shortening (the deltoid) in abduction, and (the coracobrachialis) in flexion of the upper limb.

the lower limb and prevent the hinge joint from collapse during weight bearing. The gluteus maximus will then contract and stabilize the limb in the position of extension. The same law applies to the triceps during full extension of the upper limb. The triceps also must be removed from its normal resting length before a useful contraction can occur. The brain path must be kept in this routine, whatever degree of paralysis has occurred. In many cases the joints have been removed from the normal resting place, from which stationary point, normal

articulations are expected to occur. For instance, the head of the humerus resting in the glenoid cavity is rotated in its cavity in order that a certain degree of abduction be obtained. This procedure interferes with the capsular ligaments, shortens some muscles, stretches others, and interferes with the proprioceptive reflexes. Much harm is produced where shortening occurs in muscles that contract and cause the rotation of the head of the bone in a ball and socket joint, either by spasm from the disease or deliberate shortening by abduction.

PHYSICAL THERAPY

The treatment is practically all physical therapy with mind muscle training or mind-muscle training, mind direction, mind concentration enhancing the value of the physical measures.

MUSCLE CONSCIOUSNESS

Meticulously precise muscle training is carried out. She makes the patient conscious of the insertion of the muscle. It is imperative that the physical therapist be an expert muscle anatomist. Patients in the acute stage are worked with twice daily. One to three contractions of each muscle is the rule; 2 passive and 1 active. Kenny emphasizes coordination rather than developing muscle strength. She strives to maintain normal length of tendons. She employs no massage because she believes it increases spasm.

In order to prevent or correct harmful muscle incoordination she prevents or corrects the substitution of muscle function.

She emphasizes mental awareness in the reeducation of muscle function.

Routine muscle testing or examinations in the generally accepted sense are not permitted.

She emphasizes that no "muscle in spasm" should be irritated by active or passive movements. She does not start any muscle reeducation until all muscle spasm has been abolished. She has a remarkable ability to get patients of all ages "to relax," i.e., "to do nothing." Before a muscle is directed to perform a movement, the physical therapist strokes the skin over insertion of the muscle several times, in order to get the patient to concentrate on the insertion, at which location the muscle and tendon will perform their functions. The normal mental approach to these patients is one of her strong points.

Her first thought is to make the patients muscle conscious. She uses extreme care in teaching and executing the exercises. She insists upon mental as well as physical cooperation of her patients. She does not use the respirator. She is an expert in teaching apparently hopeless patients how to breathe. She claims the sternocleidomastoid and the trapezius are the chief causes of inability to breathe in these cases and by relaxing the spasm of those muscles she can then begin to teach them how to breathe.

SPECIAL EXERCISES

Exercises are given back-lying, face-lying, sitting, or standing — never in the side-lying position.

She makes a muscle analysis on her daily rounds. In her muscle reeducation she teaches the patient to render his healthy muscles inactive while he tries to use his paralyzed ones. She stimulates the muscles physiologically through their tendons and the proprioceptive system. The physiological stimuli are initiated by fixing the patient's attention on the insertions of the muscles and tendons thereby preventing and correcting the substitution of muscle function. See figure 4.

Gentle passive exercises are carried out, but never to the point of pain. These are performed during the first two days of the sensitive stage. The patient's activities are directed to the area of the tendon where movement is to be expected. The physical therapist passes her fingers over the skin along the course of the tendons and insertions of the muscles in a stroking maneuver in order to enhance the power of concentration.

PHYSICAL UNIT

A standard physical unit will simplify the application of the Kenny method especially in a hospital where several patients are under treatment at one time.

Components: Trained personnel, Equipment.

Personnel: Doctor, Physical therapist, Nurses, Orderly.

Additional Personnel Desirable: Pediatric Resident Doctor, Orthopedic Resident Doctor.

Equipment:

Bed — fracture bed	Wool strips
Foot board	Impervious material
Portable wash tub	Pins or clips
Sterilizer	Hot water bottles
Hot water	Electric bulbs
Heater	Electric cradles
Wringer	Warm room or ward

Specific Equipment Desirable: Portable washing machine, Electric heating unit, Automatic electric wringer.

The equipment will vary according to the local situation such as:

A unit for a quarantine ward of a hospital
A unit for the general ward of a hospital
A unit for treatment in a poor home
A unit for treatment in a well-to-do home

COMPONENTS OF UNIT FOR HOT FOMENTATIONS

I. Portable washing machine.
Ordinary washtub on a truck with rubber wheels.
Foot delivery unit to raise the foments to level of wringer rollers.
Buckets like scrubmen use in large buildings.
II. A wringer attached to tub.
Automatic electric wringer or foot control.
III. Means of keeping water very hot.
Electric heating units with thermostatic control.
IV. Woolen strips and swathes of blanket material.
V. Pan for complete foments in a warm compartment ready for use.
VI. Some poles or sticks like the washer women use or long forceps.
VII. Water proof materials.
VIII. Large sterilizer to boil fomentations if they are used on more than one patient.

KENNY'S RESULTS

Her results have so impressed many responsible medical men that they have publicly announced that Miss Kenny's treatment for infantile paralysis in the acute stage holds more hope for recovery than any other teratment.

There is no doubt that her treatment abolishes pain and stiffness and minimizes the occurrence of deformities. It prevents contractures, lessens the degree of paralysis and, by treating the symptoms which appear in the acute stage, procures a higher percentage of full recovery than any other method.

Among the most important practical benefits derived from this treatment are the rapid relief from pain and sensitiveness and the prevention of contractures.

Gross deformities either do not occur or are minimal.

Undesirable visceral disturbances are not evident. Contractures are absent.

During the period of isolation, all spasm should have been relieved by the hot packs. The advent of this period is evidenced by the abolition or disappearante of pain, tenseness, hardness, firmness and resistance to stretching.

The discipline of assistants and patients is excellent.

She does not baby her patients, she doesn't even baby the babies.

The children who are cured go through a beautiful physical exercise routine.

Dr. Wallace Cole's latest statement is, in effect, the Kenny treatment saves many hospital days; no deformity has appeared up to date; the general condition of the patients is better. They have no kidney involvement and he is sure but not able to prove, there is less residual paralysis.

In witness of some very strong claims I quote Cole and Knapp: "Thus far it would seem that this method may well be the basis of the future treatment of Infantile Paralysis."

Again, the same observers: "Early treatment has some value in preventing the development of severe paralysis. We believe that the paralysis is less severe than that which would have been expected ordinarily in nearly every case."

When the Kenny system is carried out from the beginning by a trained attendant none of the undesirable sequelae and complications are found to occur. One notes (1) better circulation and the skin in good condition. (2) Good abdominal and back muscles. (3) No deformities. (4) Muscles not contracted but even more flexible than in the average normal child.

One must consider the patient as well as his disability. My observations of her personally treated patients revealed that they were in better condition than any similar group I have seen anywhere in the world. These observations included general physical and mental conditions, central and sympathetic nervous systems, psychological reactions and the physical condition of the muscles, the circulation and the metabolism.

Naturally it is impossible to accurately evaluate end-results or to do more than indicate one's impressions because epidemics vary in their severity from year to year and no one can tell with any degree of accuracy the percentage of hospitalized patients who would have recovered completely under the usual treatment.

However, the Minnesota doctors think it is possible and appropriate to state definitely that Kenny's patients are much more comfortable and cheerful during the acute stage than are those patients who are immobilized. In addition they have seen absolutely no contractures or

deformities following her treatment. Even the most severely paralyzed patient has full range of passive movement in all of his joints. No scoliosis or other spinal deformity has developed in these cases and most of them are more limber than they were before they contracted the disease. The patients are more comfortable and more cheerful. Moreover Cole and Knapp believe that the paralysis is less severe than would be expected in nearly every case. Certainly no harm has resulted in any of the observed cases under Miss Kenny's care.

COMPARISON VS. CONTROVERSY

Comparison may be helpful; Controversy lends confusion; Confusion begets mistakes.

Comparison is made where it subserves elucidation, clarification and simplification.

Controversy is not entered into because it subserves confusion and error.

PREVIOUSLY ACCEPTED MEASURES (P.A.M.) CONTRASTED WITH KENNY METHOD (K.M.)

Dr. X. demonstrated some of his patients treated by previously accepted measures. Kenny demonstrated what could be considered comparable cases treated by P.A.M. and K.M. and showed conclusively the difference between the two cases.

In the patients treated by the P.A.M. there were deformity, contractures, limitation of movement and disability. In the cases treated by the Kenny method there were no contractures, no deformities, no stiffness or limitation of movements and almost no disabilities.

If it were not for the fact that Dr. X, a competent doctor especially trained in polio work had been present and stated that he had treated those patients she compared (treated the P.A.M.) — and those patients she treated, one would be inclined to pass the matter off with the statement that the cases were not reasonably comparable.

She demonstrated two patients — one who was put in a respirator but is now very badly crippled — and another which the local experts in physical therapy and orthopedic surgery considered highly comparable where the one treated by the K.M. was in execellent physical condition and in fact has won prizes for art work since her polio attack. She states that her "bulbar cases die like everybody else's, and there is no way of preventing it."

She makes a very strong point of non-paralytic infantile paralysis.

No kidney stones form because the patients move around.

She demonstrated two patients, one treated by Dr. X. and one by her. The doctor says the conditions were practically identical. His patient had a severe lordosis with a pot belly and scoliosis, as well as very poor posture. Hers had excellent body mechanics.

In Dr. X.'s case of the bad postural result, he thought that the abdominal muscles were weak. Miss Kenny proved to his amazement that it was the spinal muscles that were "in spasm" rather than the abdominals "in paralysis."

In the past, those cases of scoliosis where the muscles are hard and bunched up on the side of the convexity the condition has been called muscle spasm. The muscle spasm has been thought to be due to vertebral rotation. Kenny believes that the vertebral rotation is secondary to the muscle spasm.

She told me that two patients were sent into the hospital to go into respirators. She asked for the worse case. It was agreed by the medical men that the one assigned to her was the worse case. That patient recovered. The other patient was put into a respirator and died within 24 hours.

In an examination of a large number of her patients, I saw no cases of scoliosis or residual neck asymmetry. The shoulder muscles were well balanced. I saw no instances of pipe stem legs. There were no subluxated shoulders or hips in a group that would, according to the law of probability, have some. Not the least of the beneficial effects of the Kenny treatment is the high level of morale of the patient, doctor, nurse, physical therapist, nurse and especially the child's parents.

RESIDUAL PARALYSIS VS. DISABILITY

From an analytical point of view, it is evident that

If you can:

1. Abolish pain
2. Abolish spasm
3. Prevent contractures

4. Prevent gross deformities

You must naturally

5. Reduce disability

and finally it must follow that you have

6. Reduced the harmful effects of paralysis

TEACHING THE KENNY METHOD

If the largest number of persons are to benefit by Miss Kenny's valuable treatment, it must be possible to administer the treatment throughout the world, in fact it should be possible to properly carry out the technical parts of the treatment in every town in the country. It should be made available as soon as possible, to the whole country.

In the February, 1942, issue of the Foundation News (official publication of the National Foundation For Infantile Paralysis) under the title "Kenny Method to be Taught," Peter Cusack stated:

"This month President Basil O'Connor and Medical Director Dr. Don W. Gudakunst visited Minneapolis to consult with the medical authorities of the University of Minnesota and with Miss Elizabeth Kenny and her staff.

"As a result of this visit a program of instruction in the Kenny method is being arranged. Three groups well be afforded training at an early date:

1. Physicians in charge of special programs, such as directors of schools of Physiotherapy, orthopedic surgeons and those in charge of contagious disease hospitals.

2. Physical therapists in charge of either teaching programs or larger organizations.

3. Nurses in contagious disease hospitals or other institutions where there are either teaching programs or large groups of poliomyelitis patients being treated.

The number of trainees who can be admitted at any one time must depend on the number of patients in the early stages of infantile paralysis in the Minneapolis hospitals, as it is only the early stages that are treated by the Kenny method. Therefore, all doctors, nurses and physiotherapists should be warned they will be shown this method only after enrolling in one of the regular courses soon to be provided for that purpose.

Both the Foundation and the University of Minnesota are doing all that is humanly possible to spread knowledge about this method of treatment of the acute stage of the disease.

When the program has been formulated by the Foundation it will provide for its Chapters to utilize a portion of their funds to make this special training available. However, no steps should be taken until the complete program is announced."

It requires a minimum of six months to teach a nurse the Kenny technic.

The nurse and physical therapist must be expert muscle anatomists.

MANUAL ON KENNY TREATMENT

There is a dire immediate need for a concise manual containing the basic principles upon which Miss Kenny predicates her treatment and the details of her treatment during the acute stage of the disease. Such a manual is in preparation under the auspices of the National Foundation and will soon be ready for distribution to the medical profession.

SUMMARY

The Kenny treatment is one of the most outstanding advances in orthopedic surgery since the time of Hugh Owen Thomas and Sir Robert Jones.

It is evident to anyone who has carefully and impartially observed Miss Kenny or her trained personnel in the treatment of patients with infantile paralysis, that continuous rigid splinting is not only "on its way out," it is "out."

It is evident that if Miss Kenny is correct there is probably no such entity as paralysis of an individual muscle. If one accepts Miss Kenny's theory of intercostal muscle spasm, the respirator may be harmful.

After nearly two years follow-up study of the 54 cases treated in the Minnesota hospitals by Miss Kenny or by her trained assistants, the medical observers are emphatic in their statements that they have observed complete recovery of the muscles of the trunk, abdomen, back and neck. They have not seen the residual deform-

ities so frequently observed in a definite proportion of cases treated by other measures.

In a group of patients treated at another hospital in the Twin Cities, which was intended to form the basis for a controlled study, it was impossible to maintain a truly controlled study because the parents of the children having infantile paralysis refused to permit withholding the Kenny Treatment. Results in this series however, were definitely better than those observed under previously accepted treatment but were not as good as those treated by the Kenny Method at the Minneapolis General Hospital.

Not the least of the marvelous aspects of the Kenny Treatment is the fact that a child who has infantile paralysis can be given the benefit of physical treatment in a farm house — especially during the period of quarantine and more particularly during the first seventy-two hours of the illness. It is during the first few days that the hot fomentations afford their greatest relief from pain and stiffness.

Miss Kenny has taught the medical profession that there is a primary physical change in the affected muscles as well as in the components of the central nervous system. She has jarred the medical and allied professions out of their complacency into an immediate offensive attack on the local condition which she has so thoroughly proved exists.

In closing let me say that the Kenny Treatment is evidently the last word in the management of the acute stage of infantile paralysis. As new discoveries are made by clinical laboratory and research workers, the exact place for the Kenny Treatment will be determined automatically.

I think the Kenny Treatment will go down in history, but its components will be dissected, dispersed and absorbed in the huge and ever growing medical armamentarium.

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RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF ABNORMAL BLOOD CONDITIONS

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Disturbances involving the erythrocytes, leukocytes and platelets are often the first indication of a disease of the blood forming organs. Frequently the diagnosis of anemia, leukemia or thrombopenic purpura is made with no attempt to determine the type of anemia, the character of leukemic cells involved in the blood disorder, or the underlying cause of the purpuric state. The prognosis and treatment of hematological disturbances depend on an accurate diagnosis. Many diseases of the blood forming organs can be cured or the life of the patient prolonged several years following specific treatment or under proper supervision.

ANEMIA

Anemia is not a diagnosis. It is a symptom. Anemia indicates a decrease in the number of circulating erythrocytes or reduction in the amount of hemoglobin below the normal standard for the age and sex of the individual. This is purely a peripheral blood evaluation, since anatomically the erythroid tissue may be hypoplastic, normal or hyperplastic. This paradox is rather common in disease of the hematopoietic organs. The anemic state is the result of one of three causes, (1) a loss of blood from hemorrhage, (2) increased blood destruction, or (3) decreased blood formation.

In recent years the classification of anemia based on the size and hemoglobin content of the average erythrocyte has proven more satisfactory from the standpoint of treatment than the complicated classifications used in the past. From the hemoglobin, erythrocyte and hematocrit determinations an anemia is classified as macrocytic, normocytic, microcytic or hypochromic in type.

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Paper presented at the Post Graduate Conference in Mattoon on November 7th, 1940. Revised December, 1941.

DETERMINATION OF THE TYPE OF ANEMIA

Type of Anemia	Mean Corpuscular Volume C.M. (cubic microns)	Mean Corpuscular Hemoglobin- (micromicrograms)	Mean Corpuscular Hemoglobin Conc. (percent)	Cell diameter (microns)
Macrocytic	94 and over	more than 27	32-36	8.0-10.0
Normocytic	82-94	27-31	32-36	*7.5
Microcytic	80 and lower	less than 27	30 or higher	6.0-7.0
Microcytic and Hypochronic	80 and lower	less than 27	29 or less	6.0-7.0

*In familial hemolytic icterus, 5.0-7.0 microns.

The classification of the anemias based on the size and hemoglobin content of the red blood cell is of assistance in the diagnosis, prognosis and treatment of many diseases associated with anemia. Four types of anemia are distinguished: (1) macrocytic anemia. All cases in which the mean corpuscular volume is greater than 94 cubic microns and the mean corpuscular hemoglobin concentration is approximately 30 percent. This group is represented chiefly by pernicious anemia, sprue etc. Liver extract and stomach preparations are used in the treatment of pernicious anemia and some related anemias; (2) normocytic anemia. Cases of anemia in which the corpuscular volume is between 80 and 94 cubic microns and the mean corpuscular hemoglobin concentration is 30 percent or greater. This group includes cases of acute blood loss, aplastic anemia etc. The treatment of the cause, blood transfusions and attempts to stimulant formation of blood are the methods to follow in this group of anemias; (3) Simple microcytic anemia. Those cases in which the mean corpuscular volume is less than 80 cubic microns and the mean corpuscular hemoglobin concentration is 30 percent or higher. In this group is found the majority of the anemias associated with chronic infections and toxic processes. Discovery and removal or treatment of the cause and blood transfusions are the important steps to follow in treating the anemias that occur in this group; (4) Hypochromic microcytic anemia. All cases in which the mean corpuscular concentration is 29 percent or less, whether the mean corpuscular volume is greatly or little reduced or even actually normal. In this type of anemia there may be little or no reduction in the erythrocytes. Nevertheless the red corpuscles usually are found to be very small and poorly filled with hemoglobin. Idiopathic hypochromic anemia is representative of this group. Correction of the cause and large doses of iron produce spectacular results in the iron-deficiency anemias that occur in this group.

Macrocytic Anemias include pernicious anemia in a relapse, cirrhosis of the liver, sprue, pregnancy, fish-tapeworm disease, aplastic anemia, acute leukemia, pellagra, hypothyroidism, carcinoma of the stomach, metastatic lesions of the bone marrow, lymphoblastomas, agranulocytosis nephritis, coeliac disease, sickle-cell anemia, Cooley's anemia and erythroblastosis.

Pernicious anemia is the most common macrocytic anemia seen in general practice. It occurs late in life. There is a marked pallor and the patient complains of extreme weakness. The three important steps in the diagnosis are (1) neurological examination, (2) gastric analysis, (3) detailed hematological studies, including sternal marrow aspiration in doubtful cases. The patient complains of numbness and tingling of both hands and feet. One of the earliest neurological findings is a loss or diminution of the vibration sense. Advanced cases present neurological symptoms and findings due to subacute combined degeneration of the spinal cord. There may be absent knee or ankle jerks and disturbances in position sense and in co-ordination. Less frequently exaggerated reflexes with a positive Babinksi occurs. Anemia may be lacking in some of these cases with advanced neurological changes. Analysis of the gastric contents aids in the diagnosis in some doubtful cases, as achlorhydria is practically a constant finding in pernicious anemia, even following the subcutaneous injection of histamine hydrochlor-

ide solution. The red blood count in a relapse may be a million or less; more often it is found to be at a level of about 2.0 million. The hemoglobin percentage is higher than the percentage of erythrocytes. The white count in pernicious anemia is low (leukopenia) with a relative increase in the number of small lymphocytes. The erythrocytes show marked variations in size (anisocytosis) and changes in shape (poikilocytosis). Many of the large red blood cells are oval (megalocytes). The red cells are fairly well saturated with hemoglobin, so that pernicious anemia is a macrocytic and hyperchromic anemia. Young red blood cells, such as normoblasts occasionally appear in the peripheral blood. The granulocytes show a shift to the right-polymorphonuclear neutrophiles with many thin elongated lobes. These cells are called pernicious anemia neutrophiles.

There is also a moderate shift to the left to include metamyelocytes and myelocytes. The blood platelets are reduced in number. A polymorphonuclear leukocytosis in an untreated case of pernicious anemia indicates the presence of an infection. The intramuscular injection of adequate amounts of liver extract is the method of treating cases of pernicious anemia. The dosage and the interval of liver injection is determined by the response in the individual patient. It is very important to explain to the patient with the disease the necessity of continuing treatment throughout life. The blood findings in a complete remission are normal. It can not be too strongly emphasized that the only criteria of adequate treatment in pernicious anemia is one based on the red blood cell size — mean corpuscular volume or Price-Jones curve. Clinically a patient with the disease with a red blood count of 4.5 millions per cubic millimeter may feel well, yet hematologically he may reveal a macrocytic red cell (mean corpuscular volume of over 100 cubic microns). Such a case requires more antipernicious anemia substance in the form of liver extract. Patients with pernicious anemia may be suffering from cancer, syphilis, diabetes mellitus, hypothyroidism, hypertension, cardiac disease, nephritis, arthritis, etc. These complications when present in an individual with pernicious anemia should be treated along with the anemia. Complicating factors may require larger amount of liver extract than is normally necessary to sustain the patient in a complete remission. Large doses of vitamin B are required in cases with nervous system changes. Only rarely is dilute hydrochloric acid and iron necessary in this disease.

The bone marrow hyperplasia in pernicious anemia is due to a proliferation of megaloblastic cells and to abnormalities of the leukopoietic tissue. Megaloblasts, which are never seen in normal marrow require some form of anti-pernicious anemia principle for their maturation and probably for their suppression in order that the normal erythroid tissue may function. This is reflected in the peripheral blood by a decrease in the average red cell volume from 100 cubic microns or more (macrocytic) to an average red cell volume of 86 cubic microns (normocytic).

The other macrocytic anemias in this group can be differentiated by a careful history; complete physical examination; selected laboratory procedures such as detailed study of the cellular elements of the blood, reticulocyte counts, icterus index, blood chemistry, urine and stool examinations, liver and kidney function tests, gastric analysis, basal metabolic rate, fragility test, roentgenological examination of the lungs, bones and gastro-intestinal tract; biopsy of a lymph node and sternal marrow aspiration. Sickle-cell anemia is rarely macrocytic in type. It occurs in persons of negro ancestry. The typical sickle cells are demonstrated in moist coverslip preparations.

Sternal aspiration will aid in differentiating pernicious anemia from carcinoma, lymphosarcoma, multiple myeloma, leukemia and aplastic anemia.

Aplastic anemia is more often normocytic than macrocytic in type. The anemia is either primary or secondary in character. The cause of the primary type which usually occurs in young individuals is unknown. There is an extreme waxy pallor. Enlargement of the lymph nodes, spleen or liver is not present. The hemoglobin, erthrocytes, leukocytes and platelets are uniformily reduced. The reticulocyte count and icterus index are low. The granulocytes are reduced in number and show "toxic" changes. This is a sign of a secondary infection. The number of normal small lymphocytes are increased. With ulcerating lesions of the oral

cavity, aplastic anemia is often wrongly diagnosed as primary agranulocytosis. Because of the bleeding tendency and purpura manifestations cases of aplastic anemia are incorrectly diagnosed as essential thrombopenic purpura hemorrhagica. Sternal marrow aspiration will show a hypoplasia of all the bone marrow elements. Some patients have a hyperplastic bone marrow with an "aplastic" peripheral blood pattern. This state of affair is often called "pseudo-aplastic anemia". The prognosis is fatal in aplastic anemia and blood transfusions are of temporary value. As long as the granulocytes and platelets are prevented from falling below the critical level, the patient can be carried along for many months on frequent blood transfusions. Intramuscular liver extract, yellow bone marrow concentrates and capsules and leukocytic extract may improve the blood picture. A case of polycythemia vera is an ideal "blood bank" to have around for treating cases of aplastic anemia.

Secondary aplastic anemia is caused by chemical and physical agents such as X-ray and radioactive substances; systemic diseases such as nephritis, metastatic carcinoma, sarcoma, Hodgkin's disease and lymphatic leukemia which either destroy, or invade and replace the normal bone marrow elements. A history of the above, physical examination, laboratory data, hematological studies, gland and bone marrow biopsy may be required for an accurate diagnosis. The treatment except for the temporary value of blood transfusions is unsatisfactory in this group of conditions.

Sprue anemia, Coeliac disease, diphylobothrium latum and the macrocytic anemia of pregnancy are often benefited by intramuscular liver extract in conjunction with other therapeutic agents such as an adequate diet, vitamins, viosterol, iron, calcium etc.

It is well to remember that although pernicious anemia is macrocytic in type during a relapse, not all diseases with a macrocytosis are cases of true megalocytic pernicious anemia. Liver extract is a specific treatment for pernicious anemia. This is not true for many diseases which are associated with a macrocytic anemia.

Normocytic Anemias include the anemia of acute blood distruction, acute blood loss, sickle-cell anemia, familial hemolytic jaundice, myelophthisic anemias, splenomegalic anemias, infections, deficiency diseases, nephritis, aplastic anemia, anemia of pregnancy, and chronic non-inflammatory diseases. Several of the more important normocytic anemias will be discussed.

Hemolytic anemia is either intrinsic or extrinsic in character. The intrinsic anemias include congenital and acquired hemolytic anemia, sickle-cell anemia and probably Cooley's anemia and erythroblastosis. A hemolytic anemia is sometimes seen associated with neoplasms, Hodgkin's disease, leukemia, liver diseases and infections. A rare type of chronic hemolytic anemia characterized by nocturnal hemoglobinuria is Marchiafava-Micheli syndrome.

Congenital hemolytic jaundice is characterized by an anemia, a palpable spleen, an increased number of reticulocytes and a lowered resistance of the erythrocytes to hemolysis in hypotonic salt solution. The course of the disease is chronic with remissions and relapses. The patients are more yellow than sick. The hemoglobin and red blood cells are reduced, but the white count is normal during a relapse. There is marked polychromasia — that is red cells that stain light blue or intense slate blue. These cells when stained vitally by brilliant cresyl blue, show minute granules or skeins of basophilic material. They are reticulated or immature erythrocytes. The red blood cells are spherical and small in diameter measuring 5 to 7 microns (normal 7.5 microns). Many of these patients develop gallstones. Splenectomy results in a clinical cure.

Drugs, chemicals and certain parasites and bacteria produce a hemolytic anemia. The acute hemolytic anemia that occurs during the administration of sufanilamide and allied drugs produce a rapid and progressive drop in the hemoglobin and erythrocytes, a reticulocytosis and a myeloid immaturity in the peripheral blood. Normoblasts may enter the peripheral blood due to toxic action of the drug on the bone marrow. The bone marrow shows a marked hyperplasia of the normoblastic tissue in all the hemolytic anemias secondary to increased red blood destruction. This takes place within the body and the principle products of the erythrocyte (hemoglobin with its iron) are retained. The accelerated erythroid activity in the bone marrow

in one case (acholuric jaundice) decreases upon the removal of the spleen and in another when the hemolytic agent is removed (sulfanilamide etc.)

The treatment of many of the hemolytic anemias is at the present time unsatisfactory. The following factors should be considered in attempting to determine the cause of a hemolytic anemia; careful history with special reference to congenital factor; inquiry as to the intake of drugs, or exposure to agents known to produce a hemolytic anemia; blood cultures, blood agglutination tests, cultures of the throat; sputum, urine and stool examinations; blood chemistry; liver and kidney function tests; roentgenological examinations of the chest, gastro-intestinal tract, kidney and bones; blood Wasserman reaction; fragility of the red blood cells; detailed hematological studies including reticulocytes, examination for sickling phenomenom, search for parasites (malaria, etc.), and red cell diameters and thickness; sternal marrow aspiration and gland biopsy; icterus index or Van den Bergh test for increased bilirubin in the blood stream, quantitative stool urobilinogen determination, Donald-Landsteiner test when hemoglobinuria is present and Ham-Dingle test for nocturnal hemoglobinuria.

Simple Microcytic Anemia is found in subacute and chronic inflammatory diseases, chronic non-inflammatory diseases and occasionally in nephritis and pregnancy. Arthritis, plumbism, malignancy without loss of blood, pulmonary tuberculosis and other infections of the lung, syphilis, congenital hemolytic anemia, unexplained fevers, Addison's disease, etc. are a few of the conditions in this group. Blood cultures and blood agglutination tests for typhoid fever, paratyphoid fever, undulant fever, typhus fever and tularemia; blood Wasserman reaction; congo red test (possible aid in diagnosis of amyloidosis); hematological studies including examination for reticulo-endothelial monocytes (aid in subacute bacterial endocarditis) are a few of the tests to be used in attempting to arrive at a diagnosis.

The red blood cells in this type of anemia show a moderate microcytosis and little or no hypochromasia. The white count may be low, normal or there may be a polymorphonuclear leukocytosis with so-called "toxic" neutrophiles that can be found in almost any kind of infection, particularly acute infections. One can get a good idea of the prognosis by studying the number of these cells and noting the so-called shift to the left. In general, the more marked the shift to the left the poorer the prognosis. The blood pattern may simulate that seen in myelogenous leukemia and the term leukemoid reaction is applied to differentiate it from genuine leukemia from which the patient never recovers. Young red cells such as normoblasts may appear in the peripheral blood. The blood platelets are normal or slightly increased in number. In the hands of an experienced observer the examination of the bone marrow is of diagnostic and prognostic value in some cases of simple microcytic anemia.

As long as the cause of the anemia is present, treatment with liver extract, iron and other medical agents are of little value. Blood transfusions will carry the patient along until the cause has been treated and eliminated.

Hypochromic Microcytic Anemia: Hemoglobin deficiency is the feature of hypochromic anemia. This anemia due to iron deficiency results from inadequate intake of iron from the food; loss of iron from the body by blood loss and the demands of the body for iron for growth and pregnancy. Conditions in which an iron deficiency is observed are nutritional anemia of infancy, chlorosis, idiopathic hypochromic anemia, hookworm infection, iron deficiency anemia of pregnancy and the hypochromic anemia of infancy and childhood caused by the excessive demand for iron by growth and other secondary facts such as the diet and gastro-intestinal disturbances that interfere with absorption.

Examination of the stools for blood; roentgenological examination of the gastro-intestinal tract for malignancies and bleeding peptic ulcers; gynecological examination in cases of vaginal bleeding; dietary habits and examination for bleeding hemorrhoids are a few of the factors to consider in attempting to find the cause of the iron deficiency state.

The physical findings in the mild cases of iron deficiency anemia are pallor, dyspnea and a moderate degree of edema of the ankles. In severe cases the pallor is often striking and associated with extreme weakness.

Examination of the blood reveals a reduction in the hemoglobin percentage greater in extent than the blood red cells which may approach normal. This results in a red cell smaller than normal and that has a decrease in the hemoglobin content. This microcytic hypochromic anemia is characteristic of all iron deficiency anemias. The total leukocyte count is normal, but it may be slightly increased. The platelets are increased and appear normal. Reticulocytes, polychromatic red blood cells and normoblasts may be present. This is a sign of regeneration. There are marked changes in size and shape of the erythrocytes with the presence of "pencil" shaped red blood cells. In severe cases a low white count with a decrease in the number of platelets is observed. The bone marrow despite the anemia is hyperplastic, the red blood cells being unable to mature properly until large doses of iron are given. Following the replacement of iron therapeutically the hyperplasia in the bone marrow returns to normal and the red blood cells become normal in size and in hemoglobin content.

There are many forms of iron which are effective provided a sufficient amount is given. The important thing in iron therapy is that an adequate supply of metallic iron be given to the patient the particular form in which it is given not being so important as the amount. Dilute hydrochloric acid should be given in those cases where there is an achlorhydria. Since most commercial iron preparations contain copper as an impurity there is no need for additional supply of this latter metal.

It is well to remember that in the male iron is required for growth; in the female for growth, menstruation, pregnancy and lactation. Iron deficiency anemia is more apt to occur during this phase of life, especially in infancy and at puberty. The microcytic hypochromic anemia due to loss of blood may occur at any age in either the male or the female. In the treatment of iron deficiency anemia a well balanced diet with adequate supply of protein and vitmains is essential. Unless the cause of the bleeding is eliminated or corrected the response of the anemia to iron therapy will be poor.

A type of microcytic hypochromic anemia which is limited to women and which is characterized by difficulty in swallowing, chronic inflammatory and atrophic changes in the mouth, pharynx and upper end of the esophagus is called Plummer-Vinson syndrome. In addition to the anemia and dysphagia the nails may turn spoon shaped and at times, there is no free hydrochloric acid in the stomach. Large doses of iron lead to improvement.

Some primary disturbances of the hematopoietic organs are associated with a microcytic hypochromic anemia as for example Latent Mediterranean disease and congenital microcytic hypochromic anemia. Such anemias fail to respond to iron therapy.

ENLARGEMENT OF THE LYMPH NODES AND SPLENOMEGALIES

The most common cause of localized lymphadenopathy is acute and chronic infections of the head and neck. Infections of the upper respiratory tract cause a chain of small, discrete, at first soft, later hard nodes in the anterior or posterior cervical region either unilateral or bilateral. The submaxillary, sublingual and postauricular lymph nodes are also variously involved. The blood examination here usually reveals no sign of an anemia in the acute stage unless anemia was present prior to the immediate infection. The white count is elevated and shows a preponderance of granulocytes with various degree of toxic shift to the left. Some infectious diseases produce a leukopenia.

Malaria, influenza, typhoid fever, pertussis, tuberculosis and syphilis which may also have associated with it an enlarged spleen, can react with an increase in the number of lymphocytes.

A frequent cause of enlarged lymph nodes of the neck in young adults is acute infectious mononucleosis or glandular fever. The symptoms most commonly encountered are sore-throat, headaches, nausea and vomiting, abdominal pain, cough, coryza, sweating and stiff neck. Skin rashes and jaundice may appear. In children the signs of an upper respiratory infection predominate and a generalized lymphoid hyperplasia is a constant feature. In adults the abdominal symptoms are commonly observed.

The average temperature in infectious mononucleosis is 101° F. but it may reach 105° F. Because of the headache and stiff neck, meningitis is often diagnosed. The diagnosed is cleared up by a blood examination. The hemoglobin per-

centage, red and platelet counts are normal. The total white count is at first low (4000) and later reaches about 20,000. The large number of atypical lymphocytes (not monocytes) which are never seen in normal blood are diagnostic for this disease. Sternal marrow aspiration will rule out any suspicion of a leukemia. The "heterophile antibody test" which tests the behavior of the patient's serum towards sheep's corpuscles substantiates the diagnosis. A false-positive Wasserman reaction occurs in some cases. These patients should not be treated for syphilis. Diet and general measures such as appropriate for any upper respiratory tract infection are indicated.

In most instances a generalized progressive enlargement of the lymphoid tissue speaks for a malignant neoplastic disease. A practically normal blood finding in an individual with enlargement of the lymph nodes is suggestive of Hodgkin's or lymphosarcoma. These two conditions fall in the group of diseases called "lymphoblastoma" which include lymphatic leukemia and mycosis fungoids. A gland biopsy is required for a final diagnosis. In some cases of lymphosarcoma, the sarcoma cells may be aspirated from the sternal marrow. Anemia and other blood findings which are not diagnostic occur late in these malignant diseases. Cases of lymphosarcoma, spontaneously or following roentgen therapy may be converted into a condition called "leukosarcoma." The malignant cells invade the bone marrow and replace the erythroid, myeloid and megakaryocytic tissue. This results in a secondary aplastic anemia. Roentgen treatment is of temporary value in the lymphoblastomas.

The leukemias may be divided from a clinical point of view into acute and chronic, leukemic and subleukemic types. Cases which live six months or less are said to be acute and the rest are called chronic. Subleukemic is used when the total count is low or practically within normal limits. Several types of leukemia are recognized, (1) Lymphatic type in which there is a generalized lymphoid hyperplasia and disordered lymphocytic formation. (2) Myelogenous type which is a disorder arising in the bone marrow and characterized by hyperplasia and abnormalities of the granulocytic formation. (3) Monocytic leukemia which is characterized by the appearance of normal and immature monocytes in the peripheral blood and a hyperplasia of the reticuloendothelial system.

Miscellaneous group of leukemias include, eosinophilic leukemia, basophilic leukemia, megakaryocytic leukemia, acute stem cell leukemia, chloroma, erythroleukemia, plasma cell leukemia and luekosarcoma. With the exception of plasma cell leukemia and leukosarcoma, all the others in this miscellaneous group are variants of myeloid leukemia.

The monocytoid blood pattern that occurs in cases of myeloid leukemia should not be confused with the blood picture of true monocytic leukemia. In the former condition the monocytes are derived from the myeloblast (Naegeli type), whereas in the true type of monocytic leukemia the monocytes develop from the reticulum (Schilling type).

The bone marrow in all the leukemias is hyperplastic and filled with cells corresponding to the type of leukemia. These cells are often immature and atypical in form.

The basal metabolic rate is elevated. Increased blood uric acid is a sign of increased destruction of leukemic cells with the release of the nucleic acid. Roentgen ray often reveals bone changes and infiltration of the lung tissue. The icteric index is occasionally increased with the development of a hemolytic anemia. The clotting time is normal, but during the purpuric stage with a reduction in the number of platelets, the bleeding time is prolonged.

The most common complaints in chronic myelogenous leukemia are fullness of the abdomen, pain in the upper left quadrant, the discovery of a large mass in the left side of the abdomen, increased weakness, pallor, difficulty in breathing on exertion, loss of weight and bleeding. Massive hemorrhage may follow the extraction of a tooth. Slight impairment of hearing may occur, and in rare instances deafness with Méniére syndrome of tinnitus and vertigo may develop. Retinal hemorrhages are common. Neurological symptoms and findings due to infiltrations of the leukemic cells into the brain and spinal cord are frequently observed.

In the chronic lymphatic variety the symptoms are similar to the above except that the complaints due to lymphatic node enlargement replace those due to an enlarged spleen. The phys-

ical findings include enlargement of the liver, spleen, lymph nodes, pallor and findings anywhere in the body due to leukemic infiltrations and hemorrhage.

The findings in monocytic leukemia vary. The lymph nodes and spleen are less often enlarged and ulcerations of the oral cavity and lesions of the skin are frequently seen in this type of leukemia.

When leukemic cells invade the skin, the condition is called leukemic cutis. The appearance of specific skin lesions in chronic myeloid leukemia is a sign of an early fatal outcome.

Fever, prostration, pallor, slight enlargement of the lymph nodes, spleen, liver, hemorrhagic manifestations, gingivitis, and ulcerations of the oral cavity are common findings in acute leukemia.

In the chronic form of the disease the hemoglobin and erythrocytes are reduced. The total white count in most cases is high, 100,000 or more. The blood platelets are either increased, normal or reduced. The blood smear in lymphatic leukemia reveals numerous uniform small lymphates. They made up 90 to 99 percent of the leukocytes. In monocytic leukemia most of the leukocytes are mature and immature monocytes. In myelogenous leukemia there is a tremendous elevation in the number of cells consisting of all varieties of immature granulocytes: myeloblasts, promyelocytes, myelocytes, metamyelocytes and mature neutrophiles. The degree of cellular immaturity, so called shift to the left, is an indication of the acuteness of the process. It can not be too strongly emphasized that the diagnosis depends on the qualitative change rather than on the quantitative change of the cellular elements.

In acute leukemia there is a rapid and progressive fall in the hemoglobin and red count. The anemia is often macrocytic in type. The white count varies, but it is frequently low (leukopenia). The platelets are reduced in number. The differential blood smear shows a preponderance of immature lymphocytes, myeloblasts or immature monocytes depending upon the type of leukemia.

Normoblasts, megakaryocytes and their fragments appear in the blood in all the leukemias.

A type of acute leukemia, practically limited to children, in which most of the leukocytes are "stem cells" or micromyeloblasts is often mistaken by an inexperienced observer for chronic small cell lymphatic leukemia. If x-ray treatment is given in such a case, death may suddenly occur.

In adults acute myeloid leukemia is the most common type of acute leukemia. Frequently in this type of leukemia, there is a condition of "hiatus leucaemicus" in which only myeloblasts and mature neutrophiles appear in the peripheral blood without any intermediate stages between the two. Acute leukopenic leukemia can be easily differentiated from idiopathic aplastic anemia and primary thrombocytopenic purpura hemorrhagica by sternal marrow biopsy.

All forms of leukemias are invariably fatal. An adequate diet, rest in bed during exacerbation; iron in large doses; liver; vitamins, especially the B complex; arsenic therapy in the form of Fowler's solution in chronic myeloid leukemia; roentgen therapy except in the acute and leukopenic phase and in monocytic type of leukemia; frequent blood transfusions and radio phosphorus (P^{23}) are all of temporary value in the leukemias.

Polycythemia vera is a progressive and ultimately fatal disease in which there is an excessive production of red blood cells (7,000,000 or more), a high percentage of hemoglobin, an elevated leukocyte and platelet count, an increased blood volume, an enlarged spleen and peculiar color of cyanosis of the face, lips, neck, mucous membranes, hands and feet. The blood pressure is normal or moderately elevated. Engorgement of the retinal vessels can be seen on ophthalmoscopic examination. Neurological symptoms and findings are common in this disease.

The blood is dark red, sticky and viscous. The blood smear examination may reveal a certain degree of immaturity of the granulocytic cells, and young red cells such as normoblasts. The bone marrow reveals a hyperplasia of the erythroid, myeloid and megakaryocytic tissue.

Treatment is directed toward reducing the total mass of circulating red blood cells. Repeated bleeding by venesection; diet low in iron content; arsenic in the form of Fowler's solution; hemolytic drugs, such phenylhydrazine or acetyl-phenylhydrazine; roentgen therapy; radio-phosphorus (P^{32}) and total thyroidectomy

with a resulting myxedema and anemia are the methods in general use.

Splenomegaly, with or without lymphadenopathy has been recorded in some 85 diseases. Enlargement of the spleen is observed in most diseases of the hematopoietic organs, in circulatory disturbances, infections, metabolic disturbances, primary tumors and in a number of unclassified conditions. By careful selection of the appropriate laboratory test in any given case, together with careful history and complete physical examination, one should be able to arrive at a correct diagnosis. Splenectomy is the treatment of choice in Hemolytic jaundice, primary thrombocytopenic purpura hemorrhagica, early phase of Banti's syndrome, thrombophlebitis of the portal and splenic vein, Felty's syndrome, and at times in Gaucher's disease, primary tuberculosis and tumors of the spleen. Splenectomy is contra-indicated in leukemia, aplastic anemia and Hodgkin's disease. The removal of the spleen in an individual with a hemolytic anemia in which the anemia is macrocytic in type and the diameter of red blood cells is greater than normal will in most cases have little or no effect on the disease. This type of hemolytic anemia is more common in children than in adults.

HEMORRHAGIC DISORDERS

The mechanism of abnormal bleeding usually involved one or more of the following factors, mainly (1) quantitative or qualitative changes of the platelets, (2) disturbances in the clotting mechanism and (3) increased permeability of the capillary wall.

In general three organs or tissues are primarily concerned in the hemorrhagic disorders. They are the bone marrow megakaryocytes which produce the blood platelets and in turn furnish the thromboplastin; the liver which supplies prothrombin, fibrinogen and heparin, and the blood vessels with their endothelial function and capillary reactions. The spleen is a disturbing factor in some thrombocytopenic states and the gastro-intestinal tract takes part in the mechanism of vitamin K formation and absorption.

A history of any familial or hereditary blood disease in the family; a review of recent contact with drugs; a thorough search for any dietary deficiency or allergic manifestation to foods, and inquiry as to recent contacts with any active or convalescent disease are important facts to note in attempting to formulate a working diagnosis in purpura conditions.

For the differentiation of the various types of hemorrhagic diseases there are necessary not only a full history, physical examination and the usual study of the blood, especially of the cellular elements, but in addition: (1) an accurate platelet count, (2) bleeding time, (3) coagulation time, (4) retractility of the blood clot, (5) determinations of the prothrombin time as evidence of a deficiency of vitamin K, (6) the capillary resistance test (Rumpel-Leede) and (7) bone marrow aspiration studies.

The classification of purpura conditions on the basis of the number of circulating blood platelets (thrombocytopenia and nonthrombocytopenia) and a classification based on defects in the coagulation mechanism of the blood aids in the diagnosis and indicates the type of treatment to follow in many of the hemorrhagic diseases. The capillary factor is a part of both classifications.

CLASSIFICATION AND TREATMENT OF HEMORRHAGIC DISEASE BASED ON THE NUMBER OF BLOOD PLATELETS

(1) *Thrombocytopenic Purpura — Essential or Primary (Werlhof's disease).* This disease is characterized by spontaneous bleeding into the skin or following the application of a tourniquet to the arm in order to obtain blood from a vein. Petechiae are usually scattered over the arms, abdomen and legs and bleeding may occur from the nose, gums and in some cases from the bowel, kidney and vagina. In females there is usually disturbances in the menstrual cycle. The bleeding time is prolonged and the coagulation time is normal with a poor or absent clot retraction. The blood platelets are absent or markedly reduced in number and they present marked variation in size and abnormalities in shape. The tourniquet test is strongly positive. Anemia when present is normocytic in type. The bone marrow reveals a megakaryocytic hyperplasia. This is the most important single differential diagnostic procedure.

Treatment: Untreated the disease is often characterized by a cyclic course of remissions and exacerbations. Therefore temporary or apparent

cures supposedly brought about through medical treatment should be viewed with this fact in mind.

Medical: High voltage roentgen therapy over the spleen or the exposure of cases of idiopathic purpura hemorrhagica to ultraviolet rays has many advocates. In females with marked vaginal bleeding temporary or permanent induced menopause by roentgen therapy over the ovaries will stop or decrease the amount of bleeding in some cases. This should be followed by splenectomy at an early date.

Snake venom in doses from 0.4 cc. to 1.0 cc of 1:3000 (moccasin venom) is given subcutaneously twice weekly. Clinical improvement occurs without any improvement in the platelet level.

Parathyroid extract plus calcium gluconate has been given to the point of intoxication which is characterized by the symptoms of vomiting, progressive weakness, apathy and lethargy.

The elimination from the diet of foods to which the patient is allergic and the removal of offending drugs such as quinine, arsphenamine, benzene and sedormid which can act directly on the bone marrow megakaryocytes or cause depletion of the circulating blood platelets are important precautionary measures.

Transfusions supply lost plasma volume and red blood cells. The transfused blood platelets have little or no effect in reestablishing the normal platelet level and therefore should not be regarded as a curative measure. The blood transfusions serve to carry the patient along until a spontaneous remission sets in or as an operative measure prior to the removal of the spleen. Blood in amounts of 500 c.c. should be given when indicated rather than several small transfusions.

There is a large group of miscellaneous measures which are of little or no value in the treatment of this disease. They include the injection of foreign proteins, calcium, proprietary coagulants, epinephrine hydrochloride, viosterol, large doses of cevitamic acid, other vitamins such as K, P, B_2 and A, and endocrine extracts.

Surgical: Splenectomy apparently results in a complete cure. The removal of the spleen is contra-indicated in cases in which the bone marrow megakaryocytes are absent or markedly reduced. Splenectomy should not be delayed because of the danger of sudden fatal termination through cerebral hemorrhage.

(2) *Symptomatic or Secondary Thrombocytopenic purpura* is found in:

(a) Blood disease — Aplastic anemia, leukemia, pernicious anemia, sickle-cell anemia, hemolytic anemia, Hodgkin's and Gaucher's Diseases.
(b) Infections — sepsis, subacute bacterial endocarditis, typhoid, tuberculosis, meningitis, pneumonia, abscess of the lung, gangrenous pharyngitis, etc.
(c) Intoxications — benzol, arsphenamine, quinine, snake venom, mercury bichloride.
(d) Radiation — roentgen ray, radium, etc.
(e) Tumors, metastases and sclerosis of the bone marrow.
(f) Anaphylaxis
(g) Avitaminosis.

The treatment in this group of purpuric states is obviously that of the underlying cause. Liver extract in pernicious anemia, splenectomy in hemolytic icterus, chemotherapy in some of the infections, removal and elimination of toxic agents and vitamin C therapy in avitaminosis is the procedure to follow in certain selected cases in this group. Blood transfusion is of temporary value in many of the ultimately fatal blood dyscrasias in the above list of purpuras.

(3) *Nonthrombocytopenic Purpura*: This group includes —

(a) Anaphylactoid or allergic conditions — Schonlein-Henoch and erythemas of Osler.
(b) Chronic diseases — nephritic and cardiac conditions.
(c) Infections — scarlet fever, typhoid, etc.
(d) Intoxications — benzol, arsphenamine, iodine, snake venom.
(e) Avitaminosis — scurvy.
(f) Miscellaneous group — purpura simplex, fulminans, senilis, cachectica, mechanical and familial and hereditary purpura.

Treatment in the nonthrombocytopenic purpuras consists of eliminating and treating the cause and following the routine suggested under Symptomatic Purpura.

In the thrombocytopenic purpuras bleeding time is prolonged and the clot is non-retractile, but the coagulation time is normal. In the nonthrombocytopenic purpuras the blood is usually quite normal in all these respects. The capillary resistance test is positive in the first group and may or may not be positive in the second. Splenectomy is contra-indicated in both groups of

purpuras except in rare instances such as hemolytic icterus, Gaucher's disease, early phase of Banti's syndrome and Felty's syndrome.

The classification of hemorrhagic disorders due to abnormalities in the coagulation mechanism of the blood is best introduced by formulating the normal clotting mechanism:

(1) Prothrombin + thromboplastin + calcium = thrombin

(2) Fibrinogen + thrombin = fibrin

It is apparent that only four primary factors are required for the clotting of blood — prothrombin, thromboplastin, calcium and fibrinogen. A deficiency of any one of these, with the probable exception of calcium, will wholly inhibit or markedly delay the coagulation of the blood. According to Howell's theory a fifth substance, anti-prothrombin, an anti-coagulant is normally present and prevents the formation of a clot in the circulating blood. The presence of an anti-coagulant is doubtful. Following the work of Dam and many others it has been proven that prothrombin is formed in the liver from vitamin K. Vitamin K (from the Danish work "Koagulation") is present in the photosynthetic portions of certain plants and is produced by bacterial activity in the intestine of man. The vitamin has been prepared chemically — it belongs to the chemical group of Naphthaquinones and is now available for therapeutic use. Clinically, avitaminosis K is manifested by a tendency to bleed due to a lowered prothrombin level of the blood.

Classification of Defects in Coagulation Mechanism (after Quick)

I Diminished prothrombin (Prothrombinopenia)
- (1) Defect in the supply of vitamin K
 - (a) Absence of bacteria in intestine — hemorrhage disease of newborn
 - (b) Faulty absorption — lack of bile salts — obstructive jaundice, biliary fistula and sprue (disturbed fat metabolism)
 - (c) Liver damage — faulty utilization of vitamin K — post anesthesia liver damage — chloroform poisoning, acute yellow atrophy
 - (d) Defective formation or inactivation — toxic sweet clover disease of cattle.

II Deficiency of calcium ions (No clinical or experimental hemorrhagic disorders known which are attributable to changes of the calcium concentration)

III Deficiency of thromboplastin (thromboplastinopenia)
- (a) Diminished number of platelets — essential and symptomatic thrombocytopenia.
- (b) Qualitative defect in platelets.
 1. Hemophilia — increased resistance of platelets
 2. Congenital thrombasthenia

IV Deficiency of fibrinogen
- (a) Nutritional deficiency
- (b) Diseases of the hematopoietic system
- (c) Severe liver damage
- (d) Snake venom
- (e) Congenital defects.

V Presence of anti-coagulants in the blood (heparin)
- (a) Peptone shock
- (b) Anaphylactic shock

The correction or elimination of the underlying cause, the administration of vitamin K preparations, other vitamins such as C and B complex, Brewer's yeast, adequate dietary requirements, blood transfusions and substitutes, and a few of the therapeutic agents listed under symptomatic purpura, in general is the procedure to follow in treating many of the conditions classified above. Vitamin K should be given pre-operatively in cases of obstructive jaundice, in operations on the intestinal tract, particularly if liver damage is suspected regardless of a normal prothrombin level of the blood. If the prothrombin level of the blood is markedly reduced due to liver damage, vitamin K is probably useless. Blood transfusions should be given in conjunction with vitamin K in such cases. The vitamin can be given orally, intramuscularly or when mixed with saline it can be given intravenously. When bile is absent from the intestinal tract, bile salts should be given orally.

It will be noted from the above subject matter that a number of the hemorrhagic diseases are of a mixed type, that is partly vascular and partly involving defects in the coagulation mechanism. The former abnormality is always present in the purpuras, otherwise bleeding would not occur. The nature of the defective endothelial structure in purpura hemorrhagica has not been demonstrated.

The presence of adequate amount of ascorbic acid in the body is essential for the proper formation of the "cement substance" between the endothelial cells of the capillary wall. A deficiency of ascorbic acid results in scurvy.

In hemophilia the prothrombin is normal, even though the clotting time is prolonged. This is due to the fact that in this disease, the platelets are abnormally resistant and therefore yield thromboplastin too slowly to bring about coagulation within the normal time. The clot retraction and blood platelets as well as the cellular elements are normal. Anemia when present results from excessive bleeding.

Hemophilia is a hereditary disease characterized by the transmission of sex linked recessive Mendelian defect, repeated hemorrhages throughout life, occurring only in males, and transmitted by females and affected males. The hemorrhages may be spontaneous, or they may be initiated by some type of trauma. Bleeding may occur into the joints which is usually followed by varying degrees of bone destruction and deformity. Absolute rest and repeated blood transfusions are the methods of treatment.

Abnormal bleeding is due to many factors. It is therefore imperative to determine the underlying cause of the bleeding process before therapy is instituted. This is especially true in essential thrombocytopenic purpura, a disease in which splenectomy results in a cure. Many failures from splenectomy in cases diagnosed "purpura hemorrhagica" have occurred because of incorrect diagnosis.

Ulcerative Lesions of the Oral Cavity and Other Mucous Membranes: Ulcerative lesions of the oral cavity and other mucous membranes are a common finding in a group of conditions called granulocytopenia or agranulocytosis. Granulocytopenia is classified as primary or secondary.

The primary type is characterized by a marked reduction in the white count (leukopenia) and a few and sometimes no granulocytes (neutropenia) on blood smear examination. The other blood elements are not effected. The symptoms usually come on suddenly with marked muscular soreness all over the body, a high fever and chills. The patient feels extremely ill and looks toxic. The lymph nodes of the neck are frequently enlarged. Soreness of the throat becomes most prominent and as the disease progresses ulceration and necrosis of the mouth and pharynx occurs. These lesions may occur in the mucous membranes of any part of the body. The pharynx appears diffusely purplish red, thus differing from the bright red and streaked throat of acute tonsillitis. This suggests breaking down of the tissue in the absence of polymorphonuclear neutrophiles. Edema of the throat develops rapidly followed by difficulty in breathing, drowsiness and even delirium. Toxemia, heart failure and death usually occur in from 24 hours to one week.

A chronic and cyclical form of this disease exist. The mortality rate in the acute cases in some series is as high as 90 percent. Among the causes of granulocytopenia are drugs, fatigue, menstruation and infection. The drugs include amidopyrine, dinitrophenol, arsenicals, gold salts, sulfanilamide and related compounds. Most of these agents are probably secondary causes of granulocytopenia. More often no cause can be found for the primary malignant neutropenia. The bone marrow shows aplasia or a hyperplasia with a "maturation arrest" of the myeloid series. The chance of recovery from the disease is best in patients showing a "maturation arrest" of the granulocytic tissue and a pronounced and sustained monocytosis peripherally.

The therapeutic agents that have been used in treating cases of malignant neutropenia include stimulating doses of roentgen ray, adenine sulphate, pentnucleotid, liver extract, iron, yellow bone marrow concentrates, leukocytic extract and small blood transfusions. Non-specific therapy such as the injection of sterile milk or turpentine is useless. Some investigators believe that the patients recover or die regardless of the therapy.

Secondary granulocytopenia differs from the primary type only in its mode of production. In most instances it carries the same prognosis as the primary form. Inflammatory changes in the oral cavity such as ulceration and necrosis with membrane formation, and a leukopenia and neutropenia can occur in acute poisoning, acute leukemia, aplastic anemia, sepsis, diphtheria and infectious mononucleosis.

Besides pale and bleeding gums, the lesions in leukemic processes involving the mouth include swelling, hypertrophy and destruction of the interdental tissue following necrosis. These changes in the oral cavity may resemble those seen in patients with scurvy, acute stomatitis

due to a variety of conditions and Vincent infection. Necrosis of the mucous membranes of the oral cavity is seen on the palate, cheeks, lips and gums. Spirochetal infections can cause similar appearing lesions. Sore throat and enlarged tonsils are sometimes seen in chronic leukemia. Necrotic lesions of the tonsils and pharynx occur in acute leukemia. Acute follicular tonsillitis, peritonsillar abscess, diphtheria, tuberculosis, syphilis and fusopirochetal disease will not be confused with leukemia and other conditions that cause leukopenia, neutropenia and ulceration of the oral cavity if the following factors and examinations are kept in mind: (1) careful inquiry concerning the use of drugs, (2) history of exposure to over dosage of roentgen rays or radio-active substances, (3) detailed blood and bone marrow studies, (4) laboratory aids such as blood cultures, bacteriological studies of the oral lesions, sputum examination, blood Wasserman reaction and several of the tests previously mentioned.

Treatment is similar to that given for primary neutropenia. This includes good nursing, hygienic care of the lesions, protection from new infections, the removal of drugs such as pyramidon, sulfanilamide etc., blood transfusions, liver extract, yellow bone marrow concentrates, leukocytic extract and pentnucleotid.

DISCUSSION

Disturbances in the normal physiological function of the body is reflected by cellular changes in the peripheral blood and in the blood forming organs. These blood changes may be slight and temporary in nature and are followed by a complete and spontaneous recovery; or the blood changes may be completely or partially reversible following specific or palliative treatment; or finally the disease affecting the hematopoietic organs may be irreversible and ultimately fatal. Therefore it is imperative that a diagnosis of the type of blood disorder be made before treatment is instituted. Accurate interpretation and diagnosis of disease processes is acquired through personal and continued experience with many varieties of conditions both clinical and hematological. It is only in this way that a better understanding of the physiologic pathology and treatment of various disorders of the blood forming organs can be approached.

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THE BASIS FOR THERAPY IN INTESTINAL OBSTRUCTION

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In recent years a decided change has occurred in the mode of treatment of intestinal obstruction. In the past it was customary to advise immediate operation because of the increasing seriousness of the condition and the high mortality rate which attended delay in surgical therapy. That immediate operation was often successful cannot be denied. That it was frequently inadvisable became apparent when it was noted that many individuals with acute intestinal obstruction were in such poor physical condition before operation was undertaken that recovery could be only a remote possibility. Thus a period of preliminary preparation of the patient for operation was deemed necessary. Some advocated a prolonged period of preparation for surgery with the hope and expectation that the cause of the obstruction would be overcome and no immediate operation would then be necessary. While this mode of treatment, too, was successful in many instances, the prolongation of this period of preparation frequently made ultimate recovery impossible. At the present time the advantages in operating on a patient who has been well prepared for operation are recognized. The decision as to the time of operation or the need for operation is made during the period in which preparation for a prospective operation takes place. This preparation is based on the factors responsible for the illness of the patient and is directed toward correcting the alterations in the normal body functions occasioned by the obstruction.

The illness of the patient with intestinal obstruction varies in intensity with: 1, the duration of symptoms; 2, the level of obstruction in the intestinal canal; and 3, the extent of vascular impairment in the involved bowel. These factors determine : a) the amount of fluid and mineral loss through vomiting or stagnation in the intestinal lumen; b) the extent of intestinal distention, and c) the severity of toxemia and infection that follows gangrene, actual or impending, of involved bowel. All of these factors play a role to a greater or lesser extent in the production of symptoms following obstruction due to any of the large variety of pathologic lesions responsible for interference with the passage of intestinal contents distally in the intestinal canal.

Duration of symptoms. Experience has demonstrated that prompt diagnosis early in the course of the patient's complaint and appropriate treatment avoid most of the factors responsible for the illness of the patient in acute intestinal obstruction. A thorough analysis of the history of the patient's complaint, a complete physical examination and the necessary laboratory work aid in establishing the correct diagnosis before irreversible changes take place. The longer the duration of the obstruction, the more extensive are those alterations in the blood and body tissues which are responsible for many of the symptoms that develop. Also, the longer the duration — the less effective become the propulsive and constrictive efforts of the intestinal musculature. The fatigue which ensues is a factor in the development of distention which supervenes. If the blood supply to the bowel is involved, the longer the duration the more cer-

Read as part of a symposium on "Intestinal Obstruction" at the Cook County Hospital, October 24, 1940.

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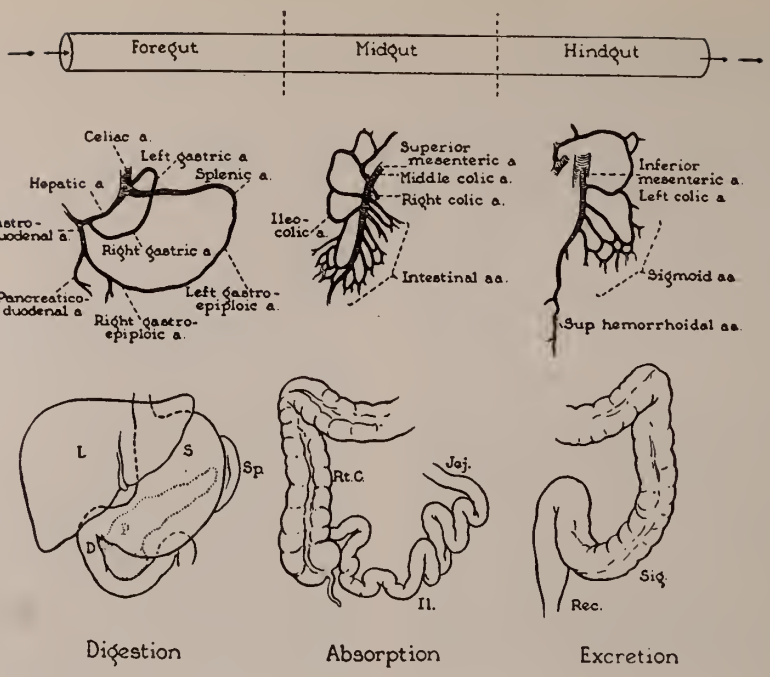


Fig. 1

tain is the danger of necrosis, peritonitis, toxemia, septicemia and shock. If vascular impairment arises early as in mesenteric thrombosis or volvulus, prompt relief is imperative. In the absence of strangulation the prompt institution of correctional therapy as outlined below will obviate many of the unfavorable consequences of prolonged interference with the flow of intestinal contents.

Level of Obstruction. To understand the cause of the variation in symptoms due to obstruction at different levels in the intestinal canal, it will be of some value to review the origin and integration of the intestinal tract. The gastro-intestinal canal embryologically is divided into three distinct portions: the foregut, the midgut and the hindgut. (Fig. 1) Anatomically the foregut is that portion of the digestive tract which receives its blood supply from the coeliac axis of the aorta. The organs supplied by this vessel are the stomach, duodenum, liver, pancreas and spleen. Physiologically, these organs are concerned with the processes of digestion. The stomach produces hydrochloric acid and enzymes and in addition, offers mechanical action to aid in reducing the food substances, so that absorption may be possible lower in the intestinal canal. The pancreas produces alkalies and enzymes for the purpose of digestion and the liver assists by producing bile salts. The relationship of the spleen to digestion becomes apparent when it is noted that the presence of food in the stomach on short notice occasions a prompt flow of digestive secretions into the lumen of the intestinal canal. Contraction of the spleen increases the blood volume and makes available fluid to the stomach, pancreas and liver for the purpose of facilitating an immediate secretion.

Anatomically, the midgut receives its blood supply from the superior mesenteric artery. The organs supplied by this vessel are the jejunum, the ileum and the right half of the colon. (Fig. 2) Physiologically, this portion of the intestinal canal is concerned with absorption. The process of absorption involves the selection of food substances by the mucous membrane from the intestinal canal. If there is a small amount of available fluid in the intestinal canal and the food substances are concentrated, absorption may be decreased or delayed. In order that the food substances may be sufficiently dilute so that absorption may be possible it is necessary for a large amount of liquid material to be poured into the intestinal lumen. This phase of absorption, dilution of food, is brought about

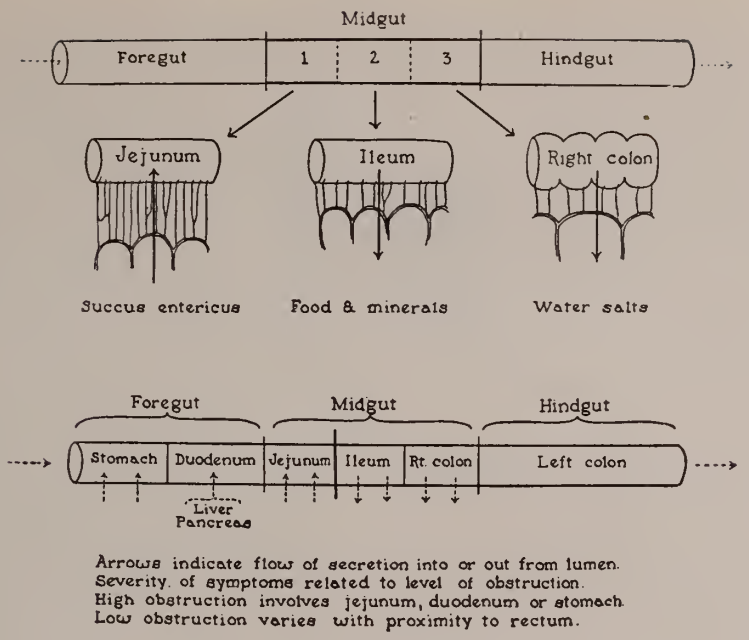


Fig. 2

by the succus entericus which is poured into the jejunum. The jejunum has a very abundant arterial supply which furnishes the fluid necessary for the production of succus entericus. Physiologically little absorption of water or salt occurs here. The second portion of the midgut is the ileum. In the ileum most of the food is actually absorbed. It is well known that chronic diseases involving the ileum are frequently associated with nutritional disturbances, such as anemias and hypovitaminosis. While the ileum may absorb large quantities of water and salts this would be disadvantageous since absorption of water here would concentrate the intestinal contents and diminish absorption of the nutritional elements remaining in the ileum. The contents of the ileum usually remain in a liquid state. The third portion of the midgut is the right half of the colon. This portion of the bowel absorbs water and salts. Thus there is no loss of the materials that were poured into the intestinal canal for the purpose of preparing food for absorption. While dextrose solutions are absorbed promptly in the ileum they are not absorbed in the colon to any appreciable extent. This indicates the variations in the specific property of absorption in the three divisions of the midgut.

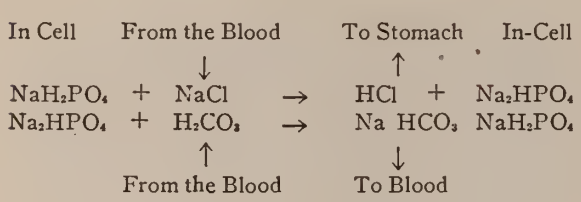
Anatomically the hindgut is supplied by one blood vessel, — the inferior mesenteric artery. It includes the left half of the colon, sigmoid and rectum. The function of the hindgut is to store the non-absorbed residue of the intestinal contents and at intervals expel this material from the intestinal canal.

The foregut and the first portion of the midgut have materials constantly being poured into their lumens. Below the jejunum absorption removes fluid from the intestinal canal.

Intestinal obstruction above the level of the junction between the jejunum and ileum prevents the passage of secretions to the absorptive portion of the intestinal canal. These secretions are lost to the body and increase the seriousness of the patient's illness. Obstruction above this point is called "high" intestinal obstruction. Obstruction below the level of the junction between the jejunum and ileum leaves a progressively longer portion of the absorbing surface available for absorption. Obstruction in the absorptive portion of the intestinal canal may well be called "intermediate" intestinal obstruction. In a "low" obstruction (left half of colon) fluids poured into the intestinal canal may be absorbed in the ileum and in the right

half of the colon down to the site of obstruction. There may be no immediate loss of fluids from the body. A characteristic of the high obstruction is that the intestinal secretions cannot be absorbed. In the low intestinal obstruction, absorption may occur with but slight impairment for a long period of time. It is clear then that high obstructions are most serious since the patients become ill sooner from loss of fluids and salts and the symptoms are more pronounced. In those patients who have a "middle" or "low" obstruction many days may pass with few symptoms.

Vomiting. Obstruction in the duodenum near the pylorus results in vomiting with loss of gastric secretion. This is characterized by a loss of water, loss of chlorides and changes in the blood. Hydrochloric acid formation in the stomach is associated with a decrease in blood chlorides and replacement of carbonic acid in the blood by bicarbonate. The following formula indicates the probable mechanism of HCl formation:



The HCl in the cell is not free (lest corrosion of the tissues takes place) but is liberated from its combined protein through the action of chloresterase in the lumen of the stomach.

Normally chlorides are returned to the blood by absorption from the intestinal canal. Chlorides lost in the urine and sweat are replaced by salt in the ingested food. The excess bicarbonate appears in the pancreatic and intestinal secretion and in the urine (alkaline tide). When absorption is impossible as in high obstruction vomiting prevents absorption of chlorides secreted in the stomach and prohibits ingestion of chlorides present in food. This results in blood changes characterized by a decrease in blood chloride, an increase in blood bicarbonates and a shift in the blood pH towards greater alkalinity. If this condition continues, the blood changes may become profound and gives rise to an alkalosis. This condition is characterized by an increase in non-protein and urea nitrogen in the blood and the patient may complain of headache, thirst, restlessness, weakness and anorexia. There occurs a loss of weight, hypohydration, mental depression and ultimately, if unrelieved, coma and death. If the vomiting follows obstruction lower in the intestinal canal, in addition to the loss of gastric secretion there will be a loss of pancreatic secretion, bile and succus entericus. This is associated with a loss of water, carbonates, bicarbonates and sodium. Definite blood changes occur. There is a decrease in blood bicarbonate, a shift in the blood pH to decreased alkalinity (acidosis) and a decrease in blood sodium. The tissues lose their capacity to hold water due to the loss of sodium. The patient develops weakness, prostration, stupor and if prolonged, coma and death. In the past many of these symptoms were attributed to a toxemia due to absorption from the obstructed bowel. It appears the symptoms are due to the pathologic state associated with the blood changes that result from vomiting.

In view of this, the first indication for therapy in the presence of vomiting is the replacement of the materials lost both qualitatively and quantitatively. The patient who is vomiting is not only losing fluids from the body but also is not receiving fluids which are the daily body requirement. Under normal circumstances the average individual requires from 2000 to 3000 cc of fluids daily. In the presence of obstruction in addition to the fluid lost through vomiting a considerable amount of fluid may be immobilized in the non-absorbing portion of the intestinal canal. Also, there may be considerable stagnation of fluid in the absorbing portion in the intestinal canal which because of distention and vascular damage may be non-functioning. This may add an additional 500 to 1500 cc to the total amount of fluid necessary. Thus the total water requirement may vary between 2500 and 4500 cc.

The loss of salts varies with the amount of vomiting and fluid stagnation. Under normal circumstances the average individual requires from 5 to 15 gms. of sodium chloride daily depending on activities, occupation, natural habits of diet, etc. This is necessary to maintain a blood chloride level that varies between 340 and 380 mg per 100 cc of blood. Gastric juice (.4%

TABLE 1
NORMAL BLOOD CONCENTRATIONS

Na	340 mg./100 cc	PLASMA PROTEINS	5.62 to 7.45 gm./100 cc.
K	20 mg.	FIBRINOGEN	.29
	309 in RBC	ALBUMEN	4.11 (3.8 to 6) A - 2
			— —
Cl	340-380 mg.	GLOBULIN	2.61 (1.5 to 3) G 1
NaCl	566-633 mg.	LEVEL OF BLOOD PROTEINS BELOW 5% — EDEMA	
Ca	10 mg.	LEVEL OF ALBUMEN BELOW 2.5% — EDEMA	
Mg	2—4.5 mg.	LEVEL OF BLOOD PROTEINS ABOVE 7% — CONCENTRATION	
P	3.5 mg.	Hb 15 gm/100 cc RBC 5,000,000/c.mm	
DEXTROSE	80-100 mg.	S.g. BLOOD 1.057 S.g. serum 1.025	
CO —	3 1	MALE 42 to 50% CELLS	
—	— —pH7.45		
H CO —	60 20	FEM. 39 to 43% CELLS	

hydrochloride acid) has approximately 4 gms of chloride in 1000 cc. The amount of salt to be administered to the patient must include his daily normal requirement plus the amount lost through vomiting and the amount immobilized in the lumen of the intestinal canal. It is obvious that these amounts vary but a blood chloride determination may aid in establishing the degree of chloride loss. Table 1 indicates normal values in the blood. Profound changes in the blood resulting from hypohydration, etc., may be determined by the use of a few laboratory tests.

A guide to the amount of fluid necessary to restore the fluid balance is the quantity of urine secreted. The patient should be supplied with that quantity of fluid which will afford the production of 1000 to 1500 cc of urine with a specific gravity that varies between 1.012 and 1.018 It is of the utmost importance to determine the urinary output since the administration of large quantities of fluids may waterlog the patient. Edema of the brain, lungs or ascities may result and prove fatal. To administer 3000 cc one may supply this to the patient intravenously at the rate of one drop per second. Such administration will require 12 hours of continuous infusion. To supply as much as 6000 cc when this amount is deemed necessary (this is rare and dangerous) it may be given at the rate of one drop per second over a period of 24 hours of continuous infusion. There are some who prefer the intermittent plan of infusion. The patient is given 1000 cc at the rate of one drop per second every alternate four hour period. It will be noted that in all instances the rate of infusion is slow in order that the danger of cardiovascular, renal, hepatic or body tissue disturbances from a more rapid flow may be avoided.

The quality of the solution administered depends on the patient's requirements. There is no doubt that the patient is in need of sodium chloride but the quantity of this mineral must be administered in proportion to the patient's needs. It will be noted in table 2 that 4000 cc

TABLE 2

1000 cc. ISOTONIC SALINE HAS 8.5 gms. NaCl (3.3 gm. Na 5.2 gm. Cl)
2000 cc. ISOTONIC SALINE HAS 17 gms. NaCl
3000 cc. ISOTONIC SALINE HAS 25.5 gms. NaCl
4000 cc. ISOTONIC SALINE HAS 34 gms. NaCl
5000 cc. ISOTONIC SALINE HAS 42.5 gms. NaCl
6000 cc. ISOTONIC SALINE HAS 51 gms. NaCl

ISOTONIC SOLUTIONS	RATIO SOLUTIONS: BLOOD		
.85% NaCl	5% DEXTROSE	5000 mg/100 cc.)	50:1
5.0% DEXTROSE	BLOOD DEX.	100 mg/100 cc.)	
.425% NaCl 2.5% DEXTROSE	.85% NaCl	850 mg/100 cc.)	4:3
RINGER'S SOLUTION	BLOOD NaCl	600 mg/100 cc.)	

SODIUM LACTATE RINGER'S (HARTMAN'S) SOLUTION

3000 cc. MIXTURE	
(.425% NaCl)	12.75 gm. NaCl
(2.5% DEXTROSE	75 g. DEXTROSE

1000 cc. 5% DEXTROSE SOLUTION (ISOTONIC) 50 gm. DEXTROSE
1000 cc. 10% DEXTROSE SOLUTION (HYPERTONIC) 100 g. DEXTROSE
1000 cc. 5% DEXTROSE IN NORMAL SALINE — (HYPERTONIC) 8.5 gm. NaCl 50 gm. DEX.

of isotonic salt solution contains 34 gms. of salt. This amount may be much more than is necessary for the patient and may be harmful in that the kidneys may not be able to eliminate the excess promptly enough. This will result in the storage of salt in the body tissues with resulting edema. If the patient already has renal damage the ability to eliminate salt may be so impaired that edema will appear more promptly. One should, therefore, gauge the amount of salt necessary by the average daily requirement and the volume of the vomitus plus the amount of secretion that may be removed from the intestinal canal by suction. Table 2 lists isotonic solutions which may be of value in intravenous therapy. Hartman's solution (sodium lactate Ringer's solution) aids materially in a more prompt restoration to normal of the hydrogen ion concentration in the blood. The mixture (2.5% dextrose with .425% sodium chloride) is also a desirable solution because its continuous administration will avoid the possibility of supplying too much or too little salt. It is an isotonic solution 4000 cc of which contains 17 gms. of sodium chloride. This amount frequently is an adequate amount in a 24 hour period for the average individual with intestinal obstruction. In the absence of vomiting 5 to 9 grams of salt will suffice. The continuous use of .9% sodium chloride in 5% dextrose usually supplies too much salt. The use of 1000 cc of isotonic sodium chloride in distilled water or 250 cc of 2% sodium chloride as an initial dose helps to restore more promptly the immediate chloride and sodium shortage.

Distention. Distention of the abdomen in intestinal obstruction is due to the accumulation of gas and the immobilization of fluids in the intestinal canal. The gas that accumulates represents for the most part swallowed air. It has been found that over 67% of the volume of the gases in intestinal obstruction are from this source. The remaining amount is derived from fermentation or putrefaction of intestinal contents and from the diffusion of gas into the bowel lumen from the blood stream. The immobilization of fluids in the intestinal canal is due to the decreased peristalsis in complete obstruction, venous stagnation, decreased absorption and a continuous secretion due to secretagogue stimulation. The results of distention are: 1, portal stagnation; 2, changes in the mucous membrane; 3, toxemia; 4, peritonitis; and 5, thoracic disturbances.

1. The portal circulation is assisted by active intestinal motility. In complete obstruction with distention a marked reduction in motility occurs. This decreases the volume of portal circulation. In the experimental animal it has been found that ligation of the portal vein results in death in a period of 6 to 18 hours. In the human a comparable condition does not exist but the decreased portal circulation in itself may result in changes which are similar to those in the experimental animal but lesser in degree. 2. Changes in the mucous membrane. It has been shown that toxins which normally are not absorbed in the normal intestinal canal may be absorbed by the distended obstructed loop. Dragstedt has shown that B. botilinum toxin is absorbed by the mucous membrane in an obstructed loop of bowel but it is not absorbed by the mucous membrane in the unobstructed bowel. 3. Toxemia. In the presence of distention diffusion of toxins through the intestinal wall occur. It is thought that these toxins may be absorbed by the lymphatics and carried to the blood stream. The nature of the toxemia and the origin of the toxins independent of the alterations in the blood is as yet not fully understood. 4. Peritonitis as the result of perforation or seepage of bacteria through the wall of a distended loop of bowel may occur. Actual perforation is rare but peritonitis in long standing cases occurs more frequently. 5. Thoracic disturbances take place in the presence of marked distention of the abdomen. Descent of the diaphragm is difficult. This impairs respiration both thoracic and abdominal. A varying degree of anoxemia may result. In some individuals the respiratory difficulty may occasion cardiac distress due to derangements in the relation between circulation and respiration.

In view of the results of distention it is obvious that the indication for the treatment of this phase of intestinal obstruction is decompression of the distended bowel. This may be accomplished by intubation and suction. Intubation may be gastric, duodenal, jejunal, ileal and in some instances cecal. The important

contributions of Wangensteen and Johnson and the development of the Miller-Abbott tube and its modifications have made treatment of this phase of intestinal obstruction possible without resorting to immediate surgery. In some instances decompression by the internal method may be difficult or impossible and the establishment of an ileostomy or cecostomy may be in order. In some cases (incarcerated hernia) prompt surgery may overcome the distention. The inhalation of oxygen has been suggested for its value in the removal of nitrogen by diffusion into the blood stream.

Strangulation. The extent of vascular impairment plays a considerable role in the severity of the illness of the patient. When strangulation of bowel occurs in the free peritoneal cavity the symptoms are more severe than when a similar acute strangulation occurs in a hernial sac. This clinical observation has been demonstrated also in the experimental animal. There occurs as a result of strangulation a loss of blood proteins into the lumen of the bowel and into the peritoneal cavity. The bowel itself becomes congested and holds immobilized a volume of blood that is in proportion to the length of the involved segment of bowel. In most instances the venous return is occluded before arterial obstruction takes place. The amount of blood pumped into tissues whose veins are occluded may be considerable. This loss of blood from the circulatory system may result in shock and prove fatal. The loss of blood protein may result in a general physical disturbance as noted in table 1. Peritonitis frequently accompanies strangulation and toxemia is often the cause of the profound symptoms that may be present. In view of these effects of strangulation it is clear that the indication for therapy for this phase of intestinal obstruction alone are the restoration of blood proteins and blood volume by the use of blood transfusions and serum transfusions; and, the removal of the dead bowel from the peritoneal cavity as promptly as the condition of the patient will permit. The value of hemo-therapy, sero-therapy and chemo-therapy for their antitoxic or anti-bacterial effects must be kept in mind.

SUMMARY

The duration of symptoms and the level of obstruction determine the intensity of three phases of intestinal obstruction from the point of view of pre-operative therapy: 1. Vomiting. The effects of this may be overcome by the use of the appropriate quality of intravenous solutions in adequate amounts. 2. Distention. This may be overcome by decompression through intubation and suction or if necessary, ileostomy, cecostomy, or release of incarceration. 3. Strangulation. The effects of strangulation may be overcome by the use of blood or plasma transfusions and the removal of the dead bowel from the peritoneal cavity as promptly as circumstances permit.

While the patient is being prepared for a prospective operation certain diagnostic and additional therapeutic procedures may be carried out. A complete examination is essential to observe hernias, scars, rectal tumors, etc.

The patient's stomach is aspirated of its contents and washed out. A suction tube is inserted and continuous suction is instituted. In the absence of acute abdominal inflammation a two quart enema is given to empty the colon. A scout film of the abdomen is taken to determine the bowel pattern. At intervals suction is discontinued and two to four ounces of mineral oil are placed into the stomach. This oil is looked for in the subsequent washings from the large bowel. If a small amount of the enema can be retained a barium enema can be given and the site of obstruction noted on fluoroscopic examination or in the x-ray film. If repeated enemas fail to relieve the obstruction in the large bowel, a cecostomy is necessary to overcome the closed loop obstruction. If oil given by mounth fails to appear in the washings from the colon and the intestinal sounds disappear a complete obstruction of the small intestine is present and exploration of the abdomen is necessary. The presence of oil or gas in the washings from the colon indicates that the obstruction is not complete, or that the obstruction is relieved and urgency for surgical treatment is not essential. Obstructions low in the ileum are not associated with tenderness in the abdomen. In the absence of infection, tenderness indicates vascular impairment to the bowel and early operation is therefore essential.

CONCLUSIONS

The administration of parenteral fluids in adequate quantity and appropriate quality; intestinal decompression; enemas and the use of mineral oil by mouth are of diagnostic and therapeutic value. These measures constitute the important pre-operative therapeutic procedures when surgery is indicated.

CARCINOMA OF THE RECTUM*

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Carcinoma of the rectum demands the most earnest attention of the medical profession and the laity, as over 7,000 persons die of this ailment annually in the United States. Unfortunately the diagnosis is seldom made at the early stage, when treatment offers its greatest promise. It is not generally realized that nearly a half of all persons with carcinoma of the rectum upon whom a radical operation has been properly performed are alive and well five years later. Moreover, it is but rarely known that a patient with a well functioning colostomy is healthy and comfortable and able to resume his business and social activities.

Diagnosis. — The diagnosis of rectal carcinoma is comparatively easy of accomplishment, and yet this phase of the problem continues to be a sadly neglected one. In many instances the failure on the part of the physician to discover a rectal growth can be laid directly to his failure to examine the rectum. This is an unpardonable error of omission. Reticence on the part of most patients to report any rectal disorder is of course well known, and with the tendency on the part of many physicians to be careless in their attitude regarding physical examination of the anorectum, a difficult situation has been created. The remedy lies in further education of both the public and the general physician. Blood in or on the stool, any complaint involving the anal canal or rectum or any change in bowel habit makes a thorough examination of this region necessary. It is a safe rule to carry out this examination in all cases in which the cause of an abdominal complaint is not immediately apparent.

Of the carcinomas which involve the large bowel, by far the majority occur in the left colon. The greater number of these left-sided lesions are found in the rectum and the rectosigmoid. Of these distally situated growths, many are within the reach of the examining finger provided that finger belongs to an inquisitive physician who is not afraid to use it. Accordingly, therefore, a good share of colonic malignancies are accessible to direct visualization by means of proctosigmoidoscopic examination. Certainly all rectal growths can be seen directly on endoscopic examination, and nearly all of them can be detected by the examining finger.

With regard to physical examination of the anorectum, the two principal procedures are palpation by means of the examining finger and inspection or visualization of the anorectum by means of the proctosigmoidoscope. It must be emphasized again and again that failure on the part of the physician to detect anything abnormal on digital examination by no means relieves him of the obligation of making a proctosigmoidoscopic examination or at least of seeing that one is made if he does not choose to do it himself.

It has been the custom of many physicians, when attempting a digital examination of a patient's rectum, to ask him to "strain down." In most instances we feel that this interferes with a satisfactory examination. We prefer to have the patient avoid straining if possible. There is one exception to this practice, and that is with regard to lesions of the upper third of the rectum and those of the rectosigmoid. In such instances the physician's finger may not reach the tumor unless the patient assumes a squatting position and "strains down." If the involved segment of the bowel is not fixed, it

*Read before the North Suburban Branch, Chicago Medical Society, Feb. 5, 1942.

may descend sufficiently to carry the tumor within reach of the examining finger.

For digital and proctosigmoidoscopic examination, the patient is placed in the inverted position. In this connection use can be made of a practical feature taught by Buie and N. D. Smith. The examiner should stand at the patient's left and use his left index finger, regardless of whether he is right or left handed. During this maneuver the other fingers of his left hand do not interfere with the examination, because they are to the left, to the right or posterior, and the tip of the index finger can usually reach the promontory of the sacrum, especially if the examiner turns toward the foot of the table and leans forward. Thus he should be able, in most instances, to explore the entire rectum digitally. Were he to use his right hand, the other fingers would be against the patient's perineum, thus limiting the digital exploration to the lower and middle thirds of the rectum. Some right-handed examiners solve this problem by standing to the patient's right during the digital examination and to his left during the endoscopic examination.

In both office and hospital practice it is frequently necessary to place a patient in a left Sims position. In this instance the use of the right index finger is much easier. The left-handed examiner can place his patient in a right Sims position, but this is not at all practicable for the endoscopic examination, which is difficult at best in the left Sims position.

It is our contention that even an inexperienced examiner can soon learn the normal landmarks within the anal canal and rectum if he endeavors to keep in mind the gross features of anorectal anatomy and the relations of the neighboring structures.

On digital examination one attempts to note the approximate size, shape and location of the tumor. It may involve any or all walls of the lower, the middle or upper third of the rectum. It may be annular or crateriform, thus invading the wall of the rectum, or it may be a soft "polypoid" tumor extending into the rectal lumen. The latter type affords a much better prognosis than the former. One also attempts to determine whether the growth is movable or fixed and whether or not there is infiltration of the neighboring tissues. The presence of blood on the examining finger is suggestive but is not of great importance as a diagnostic sign.

Inspection or visualization of the rectum is accomplished by means of the proctoscope. The inverted position allows atmospheric pressure to aid "opening up" the bowel. Frequently the examiner can demonstrate a rectal lesion to his students more satisfactorily by the use of a short anoscope and a light carrier (the patient being in an inverted position). In this way, one may obtain a better perspective. Direct visualization allows the examiner to confirm or to correct the impressions he has obtained on digital examination. He notes the extent of normal bowel between the lesion and the anus and determines the approximate portion of the rectum involved. The degree of obstruction can usually be determined during proctoscopic examination. In some instances the instrument can be passed beyond the growth into normal bowel proximal to it. There may be sufficient narrowing of the lumen to prevent passage of the ordinary endoscope (five-eighths of an inch in diameter) beyond the growth but not sufficient to prevent the passage of a smaller caliber instrument. In this way the upper limit of the lesion can be determined, and occasionally an additional lesion may be determined. It frequently happens, however, that the obstruction is so pronounced that it is dangerous to attempt to pass even a small caliber instrument through what little lumen remains. Information thus obtained should be of great help to the surgeon in the planning of his surgical attack.

A practical feature is worth mentioning at this point. It is not unusual to find that a patient who has had no warning of trouble prior to the onset of a subacute or acute obstruction is harboring a high rectal or rectosigmoid carcinoma. In such an instance the proctologist may succeed in passing a small proctoscope through the obstructed lumen. He can then pass a small rectal tube through the proctoscope and remove the latter, leaving the catheter in place. This may allow sufficient decompression to enable the surgeon to postpone radical surgical treatment for a few days so that the patient can be properly prepared.

At the time of a proctoscopic examination one has the opportunity to remove one or two small pieces of tissue from the tumor with a "biopsy forceps" for microscopic study by the pathologist. It is well to do this at the end of the examination in order that free blood may not obscure the field. Excess bleeding can be controlled by means of electrocoagulation. Some examiners prefer the electric loop, which obviates bleeding without "cooking" the specimen appreciably. On our surgical service, most patients who are to have a colonic operation are given at least two days of preparation. By the time the patient is ready for operation, the surgeon has received the pathologist's report on the biopsy specimen.

With regard to the differential diagnosis, one should consider amebic granuloma of the rectum.[1] Grossly, it may be impossible to differentiate the granulomatous mass from a malignant tumor, but biopsy and stool tests, carefully done and properly interpreted, should serve to prevent serious error in management.

When a growth is found to involve the rectovaginal septum in a female patient who is in the reproductive period of life it is well to consider the possibility of an endometrial tumor. Here again biopsy is invaluable.

Accordingly, therefore, a thorough study of rectal and colonic disease should include stool tests (cultures, ova, cysts, parasites, etc.), proctoscopic examination, including procurement of material for cultures and for direct smears and of tissue for microscopic study, and roentgenologic examination.

Photographic Study. — Records can now be made of lesions of the rectum and rectosigmoid by means of cameras designed to take pictures through the sigmoidoscope. A 35 mm. kodochrome, giving an image that is three-fourths the actual size, may be obtained for quick reference, or 16 mm. motion pictures in kodochrome may be taken to give the relationship of the tumor to the surrounding normal tissues and the anal outlet. Larger (35 mm.) views are taken by means of a powerful flash bulb with a head mirror type of arrangement (Helmholtz) which reflects light down the sigmoidoscope, the camera lens being placed behind the viewing hole in the mirror. In the movies the coaxial lighting is obtained by reflecting the condensed image of a ribbon filament lamp down one half of the tube and placing the camera lens in front of the other half. A small reflecting mirror is placed in front of the upper fourth of the camera lens. This reflects the image at the end of the sigmoidoscope into a magnifying periscope, thus enabling the operator to see the field even during the exposure of the movie film.

Pathology. — The results of the studies of recent years dealing with the pathology of carcinoma of the rectum have been of great value in clarifying the rationale of the surgical treatment. The work of David[2] reveals strong evidence that polyps are preceded by hyperplasia of the mucosa and are the precursors of carcinoma. He points out that polyps may remain benign for years but that they cannot be trusted to do so.

The majority of carcinomas of the rectum are adenocarcinomas, but fibrocarcinomas and colloid, squamous and papillomatous carcinomas have been described. The grading of the tumor has no relationship to the treatment but is a help in the determination of the prognosis. Broders, Buie and Laird[3] studied 432 specimens and concluded that a combination of the Broders grading and the Duke grading gives a more accurate prognosis than either does separately. They say that "tumors of higher grades are more rapid in growth and their metastases cause death of the patient earlier than those of the lower grades." Rankin[4] has found the incidence of glandular involvement to be in direct ratio to the grade of malignancy.

The outstanding contribution of Gilchrist and David,[5] who studied more than 8,000 different lymph nodes from 154 operative specimens of carcinoma of the rectum and colon, has demonstrated the futility of a local operation. In their series they found that the size of the rectal tumor was of little value in determining the presence or absence of lymph node metastases; that a lymph node might have carcinoma without gross change; that specimens of the rectum averaged 60 nodes per specimen, and that 63.5 per cent of the specimens of carcinoma of the rectum contained lymph node metastases.

Treatment. — In all cases, then, of carcinoma of the rectum that is operable, only the most

radical removal of the tumor and of the area which bears lymph nodes offers the patient a chance of a cure. Contrary to popular belief, the chance of cure is a very real one. In a large series of cases that has been reported,[6] 42 per cent of the patients with carcinoma of the rectum who had radical operations were alive and well without recurrences more than five years later. Carcinoma of the anal canal is usually highly malignant, and when these tumors have metastasized to the inguinal lymph nodes, radical operation is not indicated.

In recent years the criteria of operability in carcinoma of the rectum have been becoming steadily broader. In 1939 Lahey[6] stated that he considered that in 88 per cent of his cases the condition was operable; in this group there was a mortality of only 10 per cent.

A large-sized growth may often be removed as readily as a smaller one, and, moreover, it may have fewer or even no metastases. Growths on the anterior wall of the rectum are more difficult to remove than those on the posterior wall. In the male the fixation to the prostate and seminal vesicles may be so firm as to preclude excision. In the female, however, fixation to the uterus is not a contraindication to removal, as the rectum and uterus may be removed en masse. If the growth is adherent to the posterior wall of the vagina, this may be resected without difficulty. Often the fixation is due to inflammatory reaction and represents a relatively slight obstacle to successful excision. However, if the inflammatory reaction is very marked, it may be desirable to perform a colostomy and treat the distal segment by irrigations, a procedure which will markedly reduce the size of the tumor. Obesity is a distinct but not an insuperable obstacle to operation. Loss of weight and anemia are not contraindications, but an attempt should always be made to rehabilitate the very depleted patient before operation. Advanced age in itself does not preclude operation, but it may have a bearing on the decision as to whether the operation should be done in one or in two stages. The general condition of the patient must be correlated with his age. A robust patient of 65 years may be an entirely suitable subject for a one stage operation, while a younger person may require a two stage procedure. The presence of small metastases in the liver is not a contraindication to radical operation. It is thought by some that growth of the metastases is often retarded by the removal of the primary growth. Moreover, death from metastases is longer deferred and is accompanied by much less suffering than that from the primary tumor plus metastases. If the carcinoma of the rectum is allowed to remain, the patient is usually forced to a colostomy because of acute obstruction which eventually leads to pain, tenesmus and bloody discharges due to the rectal tumor. Recently an instance of successful excision of a liver metastasis has been reported.[7]

It is of greatest importance that an effort should be made to correct the erroneous unfavorable conception on the part of the public, and regrettably on the part of most physicians also, regarding a colostomy. A man or woman with a colostomy may return successfully to all former business and social activities. Seventy-five per cent or more do not require a bag or any other appliance. But to attain this successful result there must be careful attention on the part of the patient and the physician for six months. Once the colostomy is properly made, its control is entirely a matter of diet regulation and in some cases periodic irrigations. For the first few weeks an extremely constipating diet is employed. This is followed by a less constipating diet, and the final diet is almost entirely normal. An occasional patient will require paregoric or bismuth subcarbonate. Each morning, or in some cases every other morning, the patient gives himself an enema through the colostomy. This he can readily do while sitting up and employing an irrigating outfit and proper basin. In between times a piece of gauze is simply placed over the colostomy.[8] In a very few cases during the first few months, the vitallium plug devised by Smith[9] should be used to prevent soiling between evacuations. Some patients are even able to have a spontaneous movement without an irrigation.

The preparation for a radical operation on the rectum is extremely important. Two days before operation the patient is placed on a residue-free, high caloric diet, and two compatible blood donors are obtained. Six drams of Fleet's phospho-soda and an enema are given morning and evening. On the day before the operation, 6 drams of the phospho-soda and an enema are

given morning and evening, and the rectum is aspirated with a catheter at 2, 6 and 10 p.m. One dram of paregoric is given at 2 and 6 p.m. and 2 drams at 10 p.m. On the morning of the operation the rectum is aspirated and the tube is left in.

The risk of a one stage operation is no greater than the combined risks of the two operations in the two stage procedure, if cases are excluded in which there is evidence of advanced fixation due to marked inflammatory reaction about the tumor. Moreover, it is felt among those thoroughly familiar with the one stage method that the technical difficulties are less than with posterior resection, with the rectosigmoid not mobilized from above. To William Ernest Miles,[10] of London, is due the credit for popularizing the single stage abdominoperineal procedure. His operation, which was first described in *The Lancet*, in December 1908, marked the first serious departure from the practice of perineal excision of the rectum which was in vogue at that time. For the next thirty years, opinion was fairly well divided as to which was the more rational procedure. That the trend is now definitely in the direction of the radical excision as described by Miles is, however, unquestioned.

It is also interesting to note that after thirty-two years there have been only slight modifications of the original technic, which was designed primarily to include the three principal pathways of the lymphatics from the rectum. With this as an objective, Miles advocated incision of the peritoneal covering of the mesocolon on either side of the bowel from the level of the bifurcation of the aorta to the base of the bladder in the male and to the base of the uterus in the female; these lateral incisions were then joined across the base of the bladder in the male and the base of the uterus in the female. A knuckle colostomy was placed in a stab wound in the left inguinal region, and the sigmoid colon was divided approximately 2 inches below the colostomy, each end being closed with a purse-string suture. The superior hemorrhoidal artery was then ligated just below the highest sigmoidal branch and the distal segment of the colon together with its mesentery freed by blunt dissection down to the pelvic floor; the same technic served to loosen the rectum and its fascia propria from the hollow of the sacrum. After division of the lateral ligaments of the rectum, the latter organ was dissected free anteriorly from the bladder (the posterior vaginal wall in the female) as far down as the prostate gland (the posterior vaginal wall in the female). The abdominal portion of the operation was concluded by suturing the peritoneum over the isolated distal portion of the sigmoid and the upper portion of the rectum which had been crowded down in to the pelvis, and closing the abdominal wall. The patient then was turned over and the perineal phase of the operation carried out. This consisted of an elliptical skin incision extending from the sacrococcygeal junction to and encircling the anus, mobilization of the rectum, after as wide removal of the levator ani muscles as possible, and separation of the anterior wall of the rectum from the prostate gland and seminal vesicles (posterior or vaginal wall in the female).

Many new operative technics for radical excision of the rectum in one stage have been described in the past fifteen years, but the fundamental principles of the Miles operation constitute the framework upon which most of these procedures have developed. Moreover, many of the leading authorities in this field of surgery, after trying various modifications, have returned to the Miles plan as it was originally outlined. However, certain variations in the operation save a few minutes here and there, lessen the danger of contamination and reduce the chance of wound disruption. Although it has been our practice in recent years to employ the Miles operation for nearly all carcinomas of the rectum, we have adopted several modifications which we feel have made the operation a little safer and therefore may justifiably be classed as refinements. These modifications, or refinements, in the order in which they appear during the course of the operation include, first, in females, temporary anchorage of the fundus of the uterus to the anterior abdominal wall, thus providing better exposure of the cul-de-sac and rectosigmoid and obviating the necessity of manual retraction of this organ. In 1936 this modification was suggested to us by Rankin and has proved of definite advantage.

In 1919 T. de Martel,[11] of France, introduced an intestinal clamp which has proved an advance so far as asepsis is concerned and which saves

time in dividing the bowel. The instrument comprises a unit of three separate, straight, matched compression clips, the free ends of which can be locked closer with a special clip. The bowel is crushed with the three clips, after which the middle one is removed and cautery section of the bowel is performed between the two remaining clips. In recent years Wolfson[12] and Tyler[13] have designed instruments which represent modifications of the de Martel clamp but which are based on the same principle.

Pfeiffer was among the first to advocate division of the sigmoid near the rectosigmoid junction, leaving only a short segment of bowel over which the revised peritoneal floor had to be sutured. The mesentery to the proximal loop of sigmoid was excised below that portion which contained the highest sigmoid artery, and the long sigmoid loop was then drawn through a stab wound in the lower left inguinal quadrant, the excess being cut away with the cautery. Thus the principle of radical excision of the sigmoid and attached mesentery with its elaborate system of lymphatics was retained and the advantage of the shorter distal segment realized. Coller has further modified this step by leaving the devitalized excess portion of the colostomy as a conduit which eventually sloughs away, or is excised, but which can be at once opened, since its terminal opening can be placed in a bottle some distance from the wound.

Tom Jones has devised small caps made of stockinet material which are used for covering the clamped ends of the divided bowel. Into the open side of the cap is sewed a strong rubber band, which insures a tight fit over the bowel end. This so-called "over-seas cap" serves the purpose of additional protection against contamination by the resected bowel ends. Jones[14] employs figure-of-eight steel alloy wire sutures for closing the peritoneum and fascia around the colostomy and maintains that the incidence of wound infection is thereby greatly reduced.

We are convinced that the use of sulfathiazole in the posterior wound reduces the incidence of infection. During the past two months we have used the drug in six successive cases with but one instance of wound infection. As a comparison, we checked the results in the six preceding cases, in which the drug had not been employed, and found that there were five instances of definite infection of the posterior wound. In the light of this experience we feel justified in advocating the use of sulfathiazole as a routine procedure.

SUMMARY

Digital and proctosigmoidoscopic examination should be carried out not only in cases in which there are definite anorectal complaints but in all cases in which the complaint is such that it might be remotely associated with a lesion of the colon or rectum. Rectal polyps are precancerous lesions and should be destroyed. If a cancer of the rectum is operable, only a radical operation, with removal of the gland-bearing area, has any prospect of offering a cure. The preoperative preparation and the postoperative care are important parts of the treatment. The one stage abdominoperineal resection is almost always the operation of choice, and in these cases the postoperative five year rate of survival should be 40 per cent.

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The Japanese death rate is 17.4 per 1000 as compared to 10 or 11 in the United States. Japan's present death rate, in fact, resembles ours of 1900. Individual causes of death in Japan are about as prevalent now as in this country about 1900. For example, the United States tuberculosis death rate now is 45 per 100,000. In Japan in 1937 the rate was 204, closely resembling our tuberculosis death rate in 1900 of 196. The picture is similar for diarrhea and enteritis. America has more than twice as many men to draw on in the military age group as Japan — 25 million men from 20 to 34, as against Japan's 11 million in this age group. Science News-Letter, Jan. 17, 1942.

PERINEAL PROSTATECTOMY

H. C. Rolnick, M.D.
CHICAGO

Removal of the hypertrophied prostate by the perineal route is one of the 3 recognized methods for the relief of prostatic obstruction.

In the presentation of this portion of the symposium I will not attempt to emphasize the superiority of perineal, suprapubic or transurethral prostatectomy, but rather to show where and when perineal prostatectomy is best indicated.

Each of the 3 operations has its definite place and indications and because of this we do any one of them when either procedure seems best suited for the local conditions present and the general condition of the patient.

There are many urologists who do suprapubic prostatectomy routinely in all cases, usually as a 2 stage procedure. In some large clinics, particularly in the central west, the knife has been discarded in the treatment of prostatic obstruction and has been replaced by the routine employment of transurethral resection and prostatectomy, and there are also clinicians who do perineal prostatectomy exclusively.

The urologist should be well acquainted with all three procedures and in this way be able to determine for himself what best to do in a given case, rather than to do only one operation routinely.

There is nothing quite as satisfactory in prostatic surgery as a thorough acquaintance with the structures both above and below the pubis as well as the transurethral route.

The urologist should be well acquainted with the surgical anatomy of the male perineaum. There are, however, only a few men in any large community who are able to do perineal prostatectomy. Some difficulties may be encountered in mastering the perineal route, but they are not as great, nor is such an extensive experience necessary as with transurethral prostatectomy.

With the patient in the proper lithotomy position and with care and patience, the one danger, that of entering the rectum, can be avoided. Extreme care should be taken at the beginning of the operation to protect the rectum from injury, for once the rectum has been separated off and the prostatic capsule exposed, it has always seemed to me that the worst of the operation, for the surgeon, is over. Because of their lack of acquaintance with the anatomy of the male perineum most urologists do not even attempt this operation. One of the so called draw-backs of this procedure is the danger of incontinence. If the operation is done properly there is no damage to the external sphincter and the danger of incontinence, therefore, should be practically nil. Suture of the urethra to the bladder neck over a retention catheter at the end of the operation — the so-called closed method has, it seems to me, some advantages over packing or the use of a bag.

The advantages of the perineal route are many. This is the direct anatomical approach, and permits gravity drainage which is the most satisfactory. Supra-pubic drainage is uphill drainage. Considerable infection may remain in the bladder and prostatic bed for a long time after suprapubic prostatectomy, whereas, this is never as marked and clears up very quickly after perineal prostatectomy. The urine may remain cloudy for many months following supra-pubic or trans-urethral prostatectomy.

The mortality from perineal prostatectomy is the lowest of the 3 operations, the morbidity is also much less for the patient gets to feel better much sooner than with either of the other two procedures. The immediate post-operative course is much smoother.

There are certain definite indications for this operation. If the patient does not require a preliminary cystotomy the perineal route is the safest and best method of approach. Perineal prostatectomy is a one stage operation. A large number of patients fit into this category. When prostatic calculi are present, they are best removed perineally. The man with a large abdomen in whom the supra-pubic approach would be difficult, had best be operated upon perineally.

If there is any suspicion that carcinoma is present, perineal prostatectomy is the operation of choice. The treatment of clinically recognizable fully developed carcinoma of the prostate is hopeless and it therefore should be treated

Presented before the South Side Medical Assembly, February 19, 1941, as part of the Symposium on the Treatment of Prostatitism.

only palliatively. Urinary retention as a late complication with encroachment of the lumen of the urethra should be relieved by trans-urethral resection which can be repeated when necessary. The subject of carcinoma of the prostate requires more discussion than this paper will permit. In old people with carcinoma of the prostate one usually finds that the extension of the process is slow and that the patient can be made comfortable for a number of years with palliative measures and that radical surgery has a very questionable value.

However, the relatively young man of 50 or over in whom only a questionable nodule is found on rectal examination should have the benefit of radical surgery if at all possible. Radical total or subtotal prostatectomy can be done only perineally. When in doubt, a frozen section can be made with the perineum exposed and the posterior lobe and capsule presenting itself. If carcinoma is found early enough radical perineal prostatectomy with removal of all the structure from the ureteral orifices to the membranous urethra including the bladder neck, seminal vesicles, and ampullae can be done. This offers a good prognosis. There is no particular danger of incontinence with this radical procedure for the external sphincter remains intact and is sutured satisfactorily to the bladder. I have done over 40 of these operations.

Infiltrating tumors of the bladder at the bladder neck or immediately at its margin extending backward into the trigone or forward into the prostatic urethra can be removed only in this manner. It is usually not possible to properly diathermize infiltrating tumor in this location, and the end results are also unsatisfactory. Radical perineal prostatectomy with resection of the bladder neck offers a possibility for cure in these cases.

The patient with a small intra-urethral or fibrous prostate which would otherwise be amenable to trans-urethral resection may have a small calibered urethra which will not permit free passage of the resectoscope and will be torn when the large calibered resectoscope is passed through. A not infrequent sequel of trans-urethral resection is stricture of the urethra due to tears by the necessarily large resectoscope inserted into a urethra that may only comfortably admit a 23 or 25 sound. The ensuing strictures may be worse than the original disease. The patient with a small intra-urethral or fibrous prostate is in a large number of cases much more satisfactorily and safely relieved by perineal prostatectomy.

The patient who has had a perineal prostatectomy has very little or no febrile reaction and can be gotten out of bed within a few days. The nursing problem is not complicated and the patient may go home within a week — the post operative care can be given at home and thus there can be a considerable reduction in the all important item of expense of hospitalization.

When the capsule is incised preliminary to eneucleating the prostate perineally considerable pus may be found under the capsule. This may also at times be associated with some destruction of prostatic tissue and with small silent localized abscesses. Some pus is practically always present when the capsule or prostate is incised. Supra-pubic cystotomy as a first stage in a two stage prostatectomy is followed by marked reduction in the size of the prostate due to lessening of edema and infection but very frequently it does not entirely eliminate infection under the capsule or localized abscesses in the prostate. With supra-pubic prostatectomy under these conditions, the prostatic bed is severely infected, chills and fever may follow the eneucleation and recurrences of the chills and fever may follow removal of the packing. In some instances this may continue to a fatal termination. The danger of severe reactions or spread of infection following perineal prostatectomy is very slight for relatively little trauma occurs during the eneucleation and there is adequate perineal gravity drainage.

It is evident, therefore, from what has been briefly mentioned that urologists should not merely give lip-service to the merits of perineal prostatectomy. More men should be doing perineal prostatectomy for the male perineum is the surgical domain of the urologist.

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THE USE OF OXYTOCIC DRUGS DURING THE PUERPERIUM

A. E. Kanter, M.D., F.A.C.S.,
R. K. Hausmann, M.D.,
AND
A. H. Klawans, M.D.
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The study was undertaken in order that we might compare the value of various methods of treatment of post-partum patients. As a rule, we are prone to have routine post-partum or post operative orders which soon become standing orders that the attending physician tends to accept automatically. Thus, fluid extract of ergot, the old standby of obstetricians, has been used as routine medication for such a long time that we are likely to use this drug without question and without further examination into its efficiency.

Recently, one of our colleagues feeling that no routine post-partum medication was necessary to induce or aid in uterine involution, conducted his obstetrical service along this line. On examining patients carricd along on such management we had the impression that their uteri did not involute as well as did those of women who had received routine treatment with fluid extract of ergot. At about the same time we were invited to test the efficiency of an oxytocic drug composed of ergotamine tartrate 0.25 mg. in combination with ergonovine tartrate 0.125 mg.* This study covers our observations on 150 consecutive patients delivered on the house obstetrical service of the Presbyterian Hospital of Chicago. Fifty of these patients had no post-partum medication unless an actual moribidity arose. Fifty of them had the old routine treatment with 1 cc. of obstetrical pituitary extract injected intramuscularly immediately after the completion of the third stage of labor followed by the use of 1 dram of fluid extract of ergot by mouth three times daily for five days. The third group of 50 patients received an ampule of the ergotamine-ergonovine combination intramuscularly at the conclusion of the third stage of labor followed by the use of one tablet of this preparation three times daily for three days.

*Neo-Gynergen. This drug was supplied through the courtesy of the Sandoz Company.

From the Department of Obstetrics and Gynecology The Presbyterian Hospital of Chicago and Rush Medical College of the University of Chicago.

Following the usually accepted standard for maternal morbidity (100.4°F. on any two successive days not including the first day) we checked the rceords of the 150 patients in this series. Morbidity occurred in five of the patients in the group that had no medication, in six of those treated with fluid extract of ergot and in none of the women who received the ergotamine-ergonovine combination. Figures such as these may be misleading if all factors such as length of labor, type of delivery and possibility of extra-genital infection are not considered. In order to clear up these points let us review the cases in which we had morbidity. In the group that had no routine medication, morbidity arose in patients who had labors of 88½ hours, 30 hours, 23 hours, 11 hours and 9 hours. Of these only the patient with the 30 hour labor had a forceps delivery. Morbidity in the ergot treated patients followed labors of 42 hours, 23 hours, 10 hours, 6 hours, 3½ hours and 2½ hours, the patient with the 23 hour labor having been the sole subject of operative delivery. Contrasted with this, we find that in the group treated with the ergotamine-ergonovine combination with no morbidities there were labors of 60 hours, 46 hours, 42 hours, 34 hours, 29 hours and 22 hours. Two of these patients were delivered by forceps. There were no patients in the entire series with morbidities due to extra-genital infections.

A study of the duration of morbidity would be confusing since all patients who developed a well established infection were immediately placed under ergotamine-ergonovine management. With this treatment all patients returned to normal readily. This is borne out when we see that only one of the 11 patients with morbidity was forced to remain in the hospital longer than the prescribed 10 days.

During the course of this study it was our clinical impression, a feeling that was borne out by the maternity floor nurses, that patients who received the ergotamine-ergonovine medication had a more rapid uterine involution and their uteri were much firmer during the entire post-partum period than were those of patients in the other groups. This was verified by daily measurement of the uterine heights. Ideally, the uterus should be at or below the level of the symphysis pubis by the tenth day post-partum.

Our figures on the average uterine height above the symphysis pubis on the 9th and 10th days of the puerperium will bear out the impressions stated above.

Non-medicated group of patients:
9th day — 6.5 cm.
10th day — 5.8 cm.

Ergot treated group of patients:
9th day — 4.9 cm.
10th day — 5 cm.

Ergonovine-ergotamine treated group:
9th day — 4.3 cm.
10th day — 0.74 cm.

Discussion: In a series of 150 consecutive obstetrical patients delivered on the house service at the Presbyterian Hospital, there was maternal morbidity in 11 cases. This morbidity occurred in patients who received no postpartum medication designed to aid in uterine involution or in those who were placed on fluid extract of ergot. Of the fifty patients treated routinely with a combination of ergotamine-ergonovine, none had morbidity. Realizing that this is a small number of cases from which to draw any dogmatic conclusions we feel that it suffices to allow us to make a few recommendations based upon the findings correlated with our clinical impressions.

It is obvious, from our review of these patients, that the average patient will go through the puerperal period without receiving routine treatment with an oxytocic drug. Due to unknown or undetected causes, a certain number of puerperal women will develop fever of pelvic origin which, if promptly treated, has no telling effect on the patients. Yet, one never can be certain that these minor morbidities will not lead to true puerperal sepsis. Because of this, it is probably better to use some oxytocic drug as a routine postpartum measure when by such a procedure we can practically eliminate the appearance of maternal pelvic infection.

The choice of drug that may be used is largely a matter of individual likes and dislikes. After having completed this study, we feel that a preparation such as the ergotamine-ergonovine combination used here has some advantages over the treatment with fluid extract of ergot. First, we have showed that morbidity is more satisfactorily reduced and normal involution favored by using the drug combination here tested. Second, such a regimen eliminates the use of the posterior pituitary extracts which are never injected without some fear of foreign protein reaction and the danger of an acute rise in blood pressure due to the pressor effect of this preparation. Finally, in the ergotamine-ergonovine preparation we have a drug which is stable, does not vary in potency and which gives the quick effect of ergonovine followed by the more prolonged tonic action of ergotamine. The ampule solution is painless and nonirritant on intramuscular injection while the tablets for oral use are devoid of taste and odor, all of which makes this preparation decidedly more advantageous that ergot fluid extract.

CONCLUSIONS

1. Maternal morbidity can be reduced by the routine use of a combination of ergotamine and ergonovine.

2. This same preparation induced involution of the puerperal uterus in a more satisfactory manner than does fluid extract of ergot.

3. This new drug is of standard potency and stability.

4. The ampule solution causes no pain on injection, and is free from the pressor effects of pituitary as well as the possibility of allergic reactions. The tablet dosage form is devoid of the objectionable odor and taste of ergot fluid extract and, therefore, more acceptable to the patient.

310 So. Michigan Avenue

EQUINE ENCEPHALITIS IN KANSAS

Evidence that the virus of western equine encephalitis (inflammation of the tissues of the brain) causes disease in human beings in Kansas is reported in *The Journal of the American Medical Association* for December 6 by James A. Wheeler, M.D., Newton, Kan.

For his investigation he obtained specimens of blood from reported cases of encephalitis occurring in man over the state. The final results showed that 50 per cent of the patients tested showed evidence of protection of antibodies against the western equine virus.

The isolation of the western equine and St. Louis encephalitis viruses from mosquitoes, the author says, suggests the mosquito as a vector or carrier of the virus. This vector theory, he points out, is further supported by the fact that "In Kansas the incidence of poliomyelitis (infantile paralysis), encephalitis and equine encephalitis ceases abruptly with the fall frosts."

SQUINT AND AMBLYOPIA

A Plea for Their Early Treatment

HALLARD BEARD, M.D.
CHICAGO

The subject of squint, or strabismus, is one which has received much attention in the literature for many decades. In earlier times, much emphasis was placed upon the surgical treatment, the fitting of glasses, of course, being mentioned. Later, the important part played by properly fitted glasses was more and more emphasized, particularly as it was realized that, in many cases (the so-called "accomodative squints"), the condition entirely disappeared while the glasses were worn. The importance of a refractive correction for the straight, or fixing, eye, as well as for the weak, or squinting eye, has long been recognized by ophthalmologists. The past fifteen years have seen the development of an elaborate technic for the correction of squint and its attendant defects of sight by means of exercises — a system known as Orthoptics.

In the application of orthoptic exercises or eye-muscle training to a given case, it is hardly necessary for me to point out that a very detailed study of the case must first be made by the examiner who is specially trained in this work. The exercises, carefully and progressively graded, are performed by the child under the supervision of one of his parents, a trained technician, or the oculist himself. Their purpose is not only to correct the squint but to build up the sight of the weak eye and to develop the power of binocular vision.

Still other methods are employed as adjuncts in the treatment. An effort is made to strengthen the sight of the weak eye by "occlusion," that is, to force the patient to use only his weak eye for long periods by covering or blurring the sight of the strong eye. Covering the stronger eye by an opaque shield or patch serves this purpose but the method is ineffective if the patch is not worn practically 100% of the waking hours for a long period (3 to 12 months or longer). The occluding patch must be so adjusted the child cannot, by turning the head, "see around" it. The difficulty of fulfilling such conditions in practice will be apparent on reflection. The cosmetic objections to such an appendage are likewise obvious. Atropine instilled into the eye daily, by suspending accommodation, may accomplish much the same purpose without the disfiguring patch, but is less effective and carries with it the hazard of prolonged use of a potent drug. There is further danger that a too prolonged exclusion of the "master" or fixing eye, may, in the very young patient, cause it to become the squinting eye and its fellow the master.

The effect of glasses is often very striking, squints of as much as 45° not uncommonly disappear *the instant the glasses are put on.* Unfortunately, such a happy result does not always follow the fitting of glasses alone and other means must be used to straighten the eyes. In some instances a partial straightening is secured by glasses and a muscle operation is done to bring about complete parallelism. Probably the most difficult and unsatisfactory cases from the point of view of therapy are the "alternating" squints, in which the patient, having good sight in both eyes, can use either one at will but never both at the same time.

Orthoptic exercises have undoubtedly done much to help children up to seven or eight years of age and marked improvement is noted even in older children, but the golden opportunity for cultivating useful binocular vision, for the child well along in the school grades, has passed.

The reason for the situation is inherent in a defect of medical education, gross, yet remediable. It hinges upon the fact that relatively few of our doctors realize that the faculty of acute vision develops in very early life and that any obstacle to its development in infancy and early childhood results in permanent disability. Such an obstacle is strabismus, in which the sight of one eye is habitually suppressed. And while the cosmetic defect of a crossed eye may be corrected in later years, its visual weakness cannot be mended.

Peter, in his book on the Extra-Ocular Muscles states "The spontaneous cure of esotropia (convergent strabismus) is of so rare an occurrence that it should never be held out to the parents as even a remote possibility." That the associated amblyopia is an acquired weakness

Presented before the Section on Eye, Ear, Nose & Throat, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 20, 1941.

due to lack of use and not often a congenital defect is stated by this widely accepted authority in so many words.

Fuchs says in his text book: "Amblyopia through non-use arises when, since earliest childhood, an obstruction of vision has been present in one eye and has made the incidence of sharp images upon the retina impossible. . . . This same amblyopia occurs when an eye has turned since childhood. In all cases the retina, on account of defective exercise, does not attain that fineness of function which comes about in the normal eye. . ."

It is not my purpose to discuss the relative values of the various procedures mentioned above, nor to enlarge on any one of them. Indeed, the above remarks are platitudes to the average ophthalmologist. Not so to the general physician. To him, the disorders of the eye are usually a subject to be avoided or turned over to the specialist (even to the optometrist!). Confronted with the problem of a cross-eyed infant or child he is too often guilty of giving the parents some extremely bad advice. For one reason or another he may hesitate to counsel the parents to consult a specialist at once, and he temporizes. His advice is often about as follows: "Wait; maybe the child will outgrow it."

Such counsel is all too common. It is given, I am sure, not out of a desire to shirk responsibility, but rather to spare the parents trouble and expense in attending to a matter which is seemingly of little consequence and which in time may correct itself. Such a conception is, I am convinced from long experience, predominant among our medical men and women. This conviction is borne out time and again when the cross-eyed child, six or seven years old, is finally brought to the ophthalmologist. The latter finds an habitual squint, firmly established, and usually almost hopelessly weak-sighted in the squinting eye. The mother's story is that she and her husband had thought, when the child was a few months old, that there was a "cast" to one eye and had called the family doctor's attention to it. Upon being advised that the child was too young to have anything done about it, they let the matter drop, hoping the eyes would straighten themselves. I have met many parents who have put off consulting a specialist for fear he would insist upon an operation. The result of the long procrastination, however, has been costly to the child, for while his eyes may be straightened by an operation, or even by glasses alone, he has, in the majority of cases, lost the power of useful vision in one eye.

In talking with the parents of a cross-eyed child the oculist is usually careful to place emphasis upon certain facts:

1. The earliest treatment is the most effective; children older than seven years have little chance of regaining good, useful sight in the weak eye, once they have lost it thru squint. Children as young as nine months can be successfully fitted with glasses. If an operation is needed it can be done as soon as the child is old enough to undergo safely a general anesthetic (say, 18 months).

2. Squint is very commonly associated with optical defects of the eyes which give rise, in later years, to symptoms of severe eye-strain if not corrected by glasses.

3. No surgical operation will be urged, nor advised, if the eye can be straightened by other means. Indeed, it would be strongly contra-indicated.

4. The wearing of glasses by a very young child should be looked upon as a choice of two evils; to be afflicted with crossed-eyes, poor sight and eye strain or the cosmetic handicap of glasses. Most of us have witnessed some such tableau as the following: A small child wearing glasses is left sitting in its baby cab in a store while the mother goes about her shopping. Someone enters or leaves the store, passing near the child and remarks to her companion in a voice of righteous indignation: "What a crime to put glasses on a little child like that!" And, like the Boy Scout, she goes her way with the comforting feeling that she has done her good deed for the day.

The remedy for this deplorable condition lies in large measure in the hands of the general medical profession — the family doctors. They, in their turn, may well blame the medical college from which they graduated for failing to give them these essential truths regarding crossed eyes.

30 North Michigan Avenue
Chicago, Illinois

DISCUSSION

Dr. W. A. McNichols, Dixon: Dr. Beard's comprehensive paper is one which any of us would be proud to have written. He wisely omits a discussion of the method of procedure in the treatment of squint. We each have a favorite technic and each has its merits.

His recommendations meet with our unanimous approval, and we are especially fortunate that this paper is presented at the Illinois State Medical meeting. Its publication in an Illinois State Medical Journal will make it available to our medical colleagues and public health nurses. May I suggest that each of us see that a reprint of this paper is placed in the hands of our local colleagues and public health nurses. This indirect contact may be far more valuable for educational purposes than the presentation of this paper at today's session.

I would like to ask Dr. Beard if he has ever seen any bad results from the prolonged use of atropine in these cases, other than the point that he mentioned, that the fixing eye may become the squinting eye. I have never seen any irritation locally, or bad general effects, in these particular types of cases. We all know that atropine in infectious cases frequently becomes very irritating, but I have never found it true in these young children.

The speaker and the program committee are indeed to be congratulated for this presentation.

Dr. Katherine Chapman, Chicago: I certainly heartily agree with Dr. Beard about early treatment. We have a clinic at the Illinois Eye and Ear Infirmary for orthoptic training of these cases. The squint often begins at two and a half, and we see children who have already lost vision to the extent that they can scarcely get around when the good eye is covered. One can recognize that there is an amblyopia even though the child is too young for vision to be obtained on Snellen charts. The child fights against covering the good eye.

The cover of gauze is put on with adhesive tape so that he cannot get it off, and the vision usually comes up quickly and returns to normal. Whereas with the older children around the age of 15, it is almost impossible to bring the vision back to normal.

Dr. George Woodruff, Joliet: Dr. Beard mentioned that it is difficult to do anything with true alternating squint. I wish he would tell us whether they get binocular vision in alternating squint. Some authorities state that it is impossible to develop binocular vision in cases of true alternating squint.

Dr. Hallard Beard, Chicago (closing): I wish to thank Dr. McNichols for his complimentary remarks, and I want to say that if by placing reprints on this subject in the hands of school nurses and health officers it will accomplish anything in the way of improving the state of general information regarding the squint problem, I would be glad to make some effort to obtain these reprints. I do not know how that can be done except by ordering from the printer. I suppose that can be done and they can be mailed to doctors, health officers and nurses desiring them.

In reply to Dr. McNichols' question about the effect of atropine, I have not seen any bad results. I believe one may employ so weak a solution of atropine that there is little fear of causing any trouble or even a sensitization to the drug. Usually one drop of ½ per cent solution of atropine each morning is sufficient to suspend accommodation. There is some danger of bringing some atropine into the other eye as well. Even the amount carried on a finger may dilate the pupil, and both eyes may be out of commission.

I thank Dr. Chapman for her contribution on the subject of orthoptics. In answer to the question about turning the eye the other way, I would say that I can only answer the question in this way. When we find a squint which is relieved 50 per cent by means of glasses, if an operation is done which accomplishes complete parallelism of the eyes without glasses, there is then some danger of the eyes diverging when the glasses are worn. Our aim has been to correct with operation only the angular portion of the squint which remains outstanding after maximum correction has been given by glasses. In reply to Dr. Woodruff's question regarding alternating squint, I have little to say. I think alternating squints have been placed in the category of those which can never achieve true binocular vision. Some cases operated later in life, at adolescence, at their own insistance, are told that straightening can be accomplished by operation. And the ophthalmologist, against his better judgement, performs the operation, obtains parallelism of the eyes and finds the patient is worse off visually than he was before. He finds his eyes in a new position but has lost the ability to suppress the vision in one eye while he uses the other, because the image falls upon a different place in the retina. He sees double for the rest of his life of for some years, and must take other means of relieving himself of this defect of double vision.

ANOTHER FIFTH COLUMN

During the World War, venereal disease in the Army caused the loss of 7,000,000 days — equal to a full year's absence from duty for 19,000 men, Surgeon General Thomas Parran points out. Infections among military personnel originate in the civilian communities. Recent experience indicates that the venereal disease rate in a given military command reflects the efficiency of the venereal disease control program in adjacent communities. The same is true for industrial defense concentrations.—*U. S. Public Health Service Bulletin.*

THE TREATMENT OF EXTENSIVE BURNS

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The management and treatment of burns has always constituted one of the major problems confronting the physician. We distinguish between burns on the basis of the presence or absence of infection, rather than the relative term degree used to imply depth. The various classifications in relation to the depth of injured tissue are well known. These are of value. However, in this discussion, we are interested primarily, in the treatment of a clean burn as opposed to an infected one.

It has been our policy to treat all burns as clean burns if it is at all possible. Burns of more than ten to twelve hours duration usually have become contaminated. Within twenty-four to forty-eight hours there may be evidence of cellulitis, lymphangitis or suppuration.

We feel that a burn is an open wound, and therefore our policy has been to follow and reemphasize the teachings of Koch,[1] that an open wound must be cleaned; that the necrotic and devitalized tissue be completely removed; and then, it be converted into a closed wound. Sterile dressings must be applied; and lastly, the involved parts splinted to insure proper immobilization of the injured tissues.

Clean Burns, and Those up to Eight or Ten Hours Duration. The initial treatment administered to the burned patient is morphine and external heat. This is especially true if the patient is in shock. The method we have found practical is described as follows: During the interval allowed for the morphine to become effective, a room is rapidly heated to 80-85°F., and a bath tub is cleaned with soap and steaming hot water. The tub is allowed to stand full of hot water for ten minutes while instruments, basins, sheets, towels, cotton and white soap solution are assembled. The tub is then emptied and refilled two-thirds full of water at 98-100°F. To this water we add two cups of bicarbonate of soda.

The clothing is carefully removed from the patient so as not to produce further shock, and he is placed in the tub supported in a comfortable position by an assistant.

The doctor puts on his cap, mask and gloves and cleanses the non-burned areas with soft cotton saturated with white soap solution, care being taken not to break any of the blebs.

Following this, the tub is emptied and the patient is lifted onto a table covered with sterile sheets. The doctor proceeds to wash the burned areas gently with cotton and soap solution, and then irrigates the wound with sterile water.

A careful and complete debridment is performed, removing all blebs and devitalized tissue. The area is flushed with sterile water and allowed to dry.

From this point, the treatment may vary, but the essential principle of therapy is to convert this wound into a closed wound and prevent infection. This may be accomplished by various methods i.e., a non-adherent dressing, a tannic acid eschar, a paraffin cast, or other acceptable procedures.

The Non-Adherent Dressing. The application of a smooth dressing of fine meshed xeroform* or fine meshed vaseline is recommended. Fine meshed gauze is used preferably because of less likeliness of the epithelializing and granulating tissue becoming entangled in the mesh. The gauze is prepared in strips some three inches wide and twelve inches long. The amount of xeroform or vaseline used to saturate the mesh is minimal, and only enough used to allow non-adherency to the wound.

This dressing is covered with gauze and pads, and the parts are bandaged securely with muslin and with the aid of soft, moist marine sea sponges.

Lastly, the extremities are immobilized by means of light well-padded wooden splints. If it is necessary, intravenous dextrose and saline solutions may be started and a plasma infusion administered.

These dressings are not changed until the twelfth or fourteenth day, but they are reinforced on the first and second days. Only in cases of spreading infection as evidenced by continued high temperature, rapid pulse, drainage, adenopathy and pain should the wound be disturbed. In such instances, the dressings must be changed, the wound cleaned and debrided,

*Xeroform dressing — 3% xeroform (Tri-brom-phenol bismuth) in 97% yellow petrolatum.

and a Dakins solution and saline dressing or warm boric dressing applied.

As a rule, however, at the end of this twelve to fourteen day period, most of the burns are completely healed. Many which had destruction of the deeper tissues will have clean granulating surfaces, and preparations for grafting should be initiated at this time.

Tannic Acid Treatment. Davidson first used the tannic acid treatment in 1925[2]. Modifications have taken place, and as the alternative method, we advocate spraying all the burned parts with 5% tannic acid. In addition, 10% silver nitrate is applied to the areas with large cotton applicators. The patient is then placed in bed on sterile sheets, under a heat cradle, allowing air to circulate beneath. The intravenous fluids may then be started.

Tannic acid is sprayed every fifteen to thirty minutes for 16 or 18 hours until a good tan coagulum forms. During this interim, silver nitrate is applied one or two additional times.

Should vesicles form within a day or so, they are opened with sterile scissors, and the outer layer of epidermis removed. Tannic acid is re-applied to the involved parts.

If in six to eight days crusts or infection appear, the fluctuating areas should be incised or removed, and compresses of chlorinated soda or warm saline applied.

In approximately 18 to 21 days the eschar should be removed gradually, as it curls along the periphery. If granulations result, preparations for grafting should be undertaken as early as possible.

Infected Burns. These burns may be of several days duration, or they may have been previously treated ones. We consider burns of more than ten hours duration as potentially infected.

Infected burns accompanied by cellulitis are cleaned, and warm, moist compresses of saline or boric solution are applied every two hours. A heat cradle is also advisable to keep the temperature between 110° and 118°F. As the spreading infection subsides, daily dressings of Dakin solution and saline, or xeroform, are used. Burns with suppuration, debris or sloughs should be completely and meticulously debrided with sterile scissors and instruments. A fine meshed dressing of Dakin solution and saline is then applied. The affected parts are immobilized with splints and the patient put at rest.

These infected burns should be dressed daily or twice daily until clean. When granulations form, the area should be prepared for grafting. If the granulations are small and clean, a fine meshed xeroform dressing with pressure may be used until healing is complete.

General Measures. In all burns there are certain systemic reactions that must be treated. If the surface area involved is extensive or deep, there may be variable degrees of shock. In a large series of burns treated at the Cook County Hospital, it has been our observation that where a patient succumbs, death is usually the result of one of two factors: First, primary shock, from which the patient dies within six to twenty-four hours after the injury. Second, sepsis. Patients who survive the initial shock but later succumb, usually die within four to six months of a chronic sepsis and hypoproteinemia.

The shock, therefore, must be combatted first, by the administration of large adequate doses of morphine. External heat must be applied in the form of a heat cradle, blankets, and hot water bottles. Dextrose and saline should be administered intravenously. In a normal adult with extensive burns, the daily fluid requirement may be 5000 c.c. or 6000 c.c. We strongly recommend the immediate and then daily use of an infusion of 250 c.c. to 500 c.c. of blood plasma.

Later the diet should be high in vitamins and proteins. Vitamin administration in any of the available proprietary concentrates should be encouraged. Prophylactic doses of tetanus anti-toxin may be administered.

When clean granulations form, after meticulous care of deeper burns, early use of skin grafts of intermediate thickness is recommended. This converts an open wound into a closed wound and thus minimizes the infection, the loss of blood and proteins, and lastly reduces the contractures and deformities.

Gentian violet has been advocated by some surgeons with good results, but in general this treatment has not been favored by our staff.

Small burns may be successfully treated with a smooth dressing of xeroform, or some other

soothing ointment as Amertan, Tanipaste, or Butesin picrate.

SUMMARY

1. Burns are treated according to the presence or absence of infection.
2. A most important principle in the treatment of burns is conversion into a clean wound after thorough soap and water cleansing and debridment.
3. The simplest procedures which accomplish good functional results are the most desirable.
4. We advocate the use of a non-adherent fine mesh xeroform dressing in the treatment of clean burns.
5. Immediate and repeated use of blood plasma is recommended in all severe burns.
6. Surgeons must be conscious of the fact that the treatment of an extensive burn is a long time-consuming procedure, and throughout the process we adhere to the principles used in the care of any open wound; cleanliness, asepsis, early conversion into a closed wound, and immobilization.
7. Intermediate thickness grafts are recommended when grafting is necessary.

REFERENCES

1. Sumner Koch — Personal Communication.
2. E. C. Davidson: Tannic Acid in the treatment of burns. S.G.O., Vol. 41, 202, 1925.

THE NUMBER OF TYPHOID DEATHS IN 1940 WAS LOWEST ON RECORD

The Twenty-Ninth Annual Report, Published In Journal of A. M. A. Shows Progress Made in 78 U. S. Cities Since 1910

The number of deaths from typhoid in 1940 in seventy-eight cities for which data have been available since 1910 was the lowest on record, it is revealed in the Twenty-Ninth Annual Report of Typhoid in the Large Cities of the United States, published in *The Journal of the American Medical Association* for January 17. In the seventy-eight cities for which these data have been available since 1910, there were one hundred and seventy-two deaths in 1940 as compared with two hundred and thirty-two in 1939 and two hundred and fifty-seven in 1938. For the ninety-three cities included in the survey for the five years 1936-1940, the number of cities with no death from typhoid increased from eighteen in 1936 to forty-one in 1940. In 1940 also there were eighteen cities with no typhoid death for at least two years as opposed to fourteen such cities in 1939.

"Less impressive," the report points out, "is the fact that in 1940 there were twelve cities with rates in excess of 2.0 [per hundred thousand] while there were but ten such cities in 1939. It should be emphasized that in Trenton [one of the twelve cities] all deaths were among nonresidents, and in six of the remaining cities with rates in excess of 2.0 the records indicate that one third or more of the deaths were among nonresidents. Nine cities in the first rank [0.1 to 1.9 deaths per hundred thousand], Boston, Columbus, Akron, Oakland, Atlanta, Salt Lake City, Albany, Evansville, Syracuse, would appear (in addition to Trenton) in the honor roll [no typhoid death] were they not charged with deaths in nonresidents. . . . The rate for all cities is now just about one half of 1.0 per hundred thousand of population. No outbreaks have been recorded. Preventive measures have been the same as reported for previous years."

In regard to the manner in which the figures used in the summary were obtained, the report says: "In anticipation of an opportunity to reassemble the number of deaths from typhoid in each of the ninety-three cities which have been included in these reports in previous years, and in order to recalculate the rates in light of the 1940 census figures, each health officer was requested to furnish the number of deaths from typhoid, both among residents and among nonresidents for each of the last eleven years, 1930 to 1940 inclusive. This procedure demonstrated how difficult is the task of obtaining for such summary figures which are altogether comparable with those secured for previous years. Many clerical errors were evident which required much correspondence and, for some cities, the rechecking of local records and original certificates. . . . It has been our expressed intent to include all typhoid deaths, both resident and nonresident, but in spite of this declaration some health officers have entirely omitted nonresident deaths

for allocations made within the state. Common denominators for purposes of comparison cannot be obtained in this way."

Comparing the deaths as reported by each of the geographic divisions of the country, the report says:

"Ten New England cities (Cambridge, Fall River, Hartford, Lowell, Lynn, New Bedford, New Haven, Springfield, Waterbury, Worcester) report no death from typhoid in 1940. . . . Of eighteen cities among the ninety-three in the United States recording no deaths from typhoid during the past two years, nine, or one half of the total, are in the New England group. The New England cities as a whole (population 2,579,152) have lost first place among the grouped cities [with 0.35 deaths per hundred thousand]. The group of Middle Atlantic cities has moved from second to first place, the group of Mountain and Pacific cities occupies second place for 1940 and the New England and East North Central cities tie for third place. For the quinquennial average (1936-1940) the New England group continues to hold first place. . . .

"The first place Middle Atlantic cities have a group rate (0.27) which is lower than that of 1939 (0.37) and 1938 (0.44). Nine cities (Buffalo, Camden, Erie, Newark, Reading, Rochester, Scranton, Utica, Yonkers) report no typhoid death in 1940. . . .

"For the nine cities of the South Atlantic states which have been included in previous reviews, the local health officers now report one hundred and eighty-two deaths . . . for the five years 1936-1940. The rate (0.73) is significantly lower than that of 1939 (0.93). . . . Four of the ten cities (Charlotte, Jacksonville, Tampa, Wilmington) record no death in 1940. . . .

"For the eighteen cities [included in the East North Central group, population 9,386,378] the health officers report two hundred and forty-five deaths for the five year period 1936-1940. . . . The rate for 1940 (0.35) is lower than that of 1939 (0.48) and equal to the rate for the New England cities. There are seven cities (Canton, Fort Wayne, Grand Rapids, Milwaukee, Peoria, South Ben, Youngstown) which report no death in 1940. . . .

"The six cities in the East South Central group (population 1,286,747) show a decrease in the death rate (2.09 in 1940; 2.58 in 1939). The health officers now record one hundred and sixty-one deaths for the quinquennium 1936-1940. . . .

"The West North Central group (population 2,716,484) shows a decrease in the death rate from 0.52 in 1939 to 0.41 in 1940. . . . The rate for the nine cities (0.41) approximates that (0.35) for the New England and the East North Central groups. Four cities (Des Moines, Duluth, St. Paul, Wichita) record no death in 1940. . . .

"The cities in the West South Central group (population 2,048,692) report a very significant reduction in the typhoid rate (3.35 in 1939, 2.00 in 1940). The number of reported deaths dropped from sixty-eight in 1939 to forty-one in 1940. . . . Tulsa records no death in 1940. . . .

"For the eleven cities [included in the Mountain and Pacific group, population 4,186,039] the health officers report one hundred and twenty-three deaths for the five year period 1936-1940. . . . The rate for 1940 (0.30) is lower than that of 1939 (0.48). The group of Mountain and Pacific cities occupies second place for 1940. . . . In 1940 five cities (Denver, Portland, San Diego, Seattle, Spokane) among the original eleven record no death."

THE SPECIALIST

The late Dr. A. J. Ochsner, of Chicago, distinguished for his clarity of thought and sound appreciation of values, used to say that if a general practitioner knew three things about a disease condition that were really true and important, he probably would be a good diagnostician; he might still be good if he knew five things and was an exceptional man, but if he knew too many things, he was likely to become lost in the fog of the minutiae.

And the specialist, as most of you gentlemen will become, must realize that it is a good thing for him to know something about many things. If he can know much about his particular subject, and in addition be sufficiently well versed in general knowledge, he will not find himself embarrassed as many are today by seeing the patient only through the eyes of his specialty and missing something of vital importance to the patient. It is specialists of this superior type that we hope you fellowshipmen will become.—*Wm. J. Mayo, M.D., Proceedings of the Staff Meetings of the Mayo Clinic, August* 6, 1941.

In every mental institution tuberculosis is a problem of first order. Of the deaths from tuberculosis in the United States, 5.2% occur in mental hospitals while only 15.9% are in tuberculosis hospitals. M. Pollak, M.D., et al, Amer. Rev. of Tuber. Mar., 1941.

Clinicopathologic Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY

Victor Levine, M.D.
St. Anthony's Hospital
CHICAGO

CASE 1 — CARDIAC AND PULMONARY INFARCTION

Dr. Anton Vlcek: Patient entered hospital with a history of pain in left chest, cough and expectoration for past two weeks. He stated that he had a pleurisy for the last two weeks which has become worse lately. Expectoration is a thick mucus type with no sign of blood. Other complaints were: loss of appetite, some loss of weight, dyspnea and cyanosis. The remainder of the history was essentially negative.

Physical Examination: A well-developed, well-nourished, white male, 44 years of age, in obvious respiratory distress, cyanotic and complaining of pain in his left chest. Chest examination revealed respiratory expansion decreased on left side, lower left chest dull, moist rales in left lower chest and in right upper chest and vocal fremitus decreased on left side. Abdominal examination was negative.

Laboratory Findings: Wasserman, negative; urine, negative; White Blood Count, 13,300; Red Blood Count, 4,600,000; sputum, negative for T B and pneumonia.

Course: Patient entered hospital on June 14, 1941 with much respiratory difficulty but normal temperature with fast pulse and respirations. During the next few days patient became much worse and thoracentesis gave 130 cc. of bloody serous fluid. His condition became rapidly worse and he expired two days after entrance.

X-ray film of the chest, taken at the bedside, revealed no thoracic deformities or anomalies. The left pulmonary field disclosed a rather extensive uniform mass density occupying the entire lower lobe of the lung. The character of the lesion is both pleural and pulmonary. Further qualifications could not be made and follow-up films were suggested.

Dr. Victor Levine: These first three cases are shown at this time because they seem to fit together as a group of cases in which there are complications of cardiac conditions.

At autopsy on this first case, the left pleural cavity was found to contain a 1000 cc. of a cloudy, brown, thin fluid which was slightly blood-tinged. The right side had 500 cc. of a similar fluid. The heart weighed 450 gms.

The heart shows the following findings: In the apices of both ventricles there were blood clots, more marked in the left ventricle. There is also some in the auricular appendage which does not show the way this heart is placed. Along the ventricular wall there is a large blood clot. The inter-ventricular septum has a very marked substitution of muscle by irregular fibrous bands. This change extends thruout the muscle which corresponds to the blood clot in the left ventricle. Near the surface of the right ventricle there are soft brown necrotic areas between the bands of fibrosis. On the anterior wall of the right ventricle there is an area thinned to 2 mm. and is mainly replaced by scar tissue. The coronary arteries showed only a slight atheromatosis. At one point the right coronary is markedly narrowed but not occluded.

These are the lungs. On the left side there is seen a large infarct which occupies most of

the left lower lobe and the surface is covered by a little light gray fibrin. It is often impossible to tell what these consolidations are before they are cut, but after cutting it is possible to see that this is a very large infarct. In a branch of the pulmonary artery there is a large embolus. In the right lung there is a smaller infarct.

Anatomic Diagnosis: Eccentric hypertrophy of tht heart; old and recent infarction of the interventricular septum; mural thrombus in the apex of the left ventricle overlying the infarct; old infarction of the anterior wall of the right ventricle; mural thrombi in the right apex and auricular appendage of the heart; emboli to the branches of both pulmonary arteries with large recent hemorrhagic infarctions in the left lower and right middle pulmonary lobes; focal narrowing of the right main coronary artery; marked blood-tinged hydrothorax of both sides.

DISCUSSION

This case fits in to some extent with the clinical findings of pain in the chest and respiratory difficulty which was so great from these infarcts that it was considered a possible pneumonia. The pain could be produced by these infarcts. But I can not say where the old infarct of the heart came from. Sometimes the occlusions are in very fine vessels and I am unable to open them with the scissors. The coronary arteries were not sclerotic and if you will look at the infarct in the heart, it is seen to be somewhat spotty as though it was produced by a number of small occlusions.

Because of the spotty appearance of the fibrosis, it is possible that the original cardiac necrosis was caused by functional changes. It is well known in hypertension that there is an increased amount of spasm especially in the arterioles. In fact it is a common finding in cases of hypertension to find scattered small areas of fibrosis thruout the heart although in many cases these areas of fibrosis are so small that they can only be detected microscopically. In other cases these scattered small areas can be seen with the naked eye and in some cases to become very marked and rather localized as seen in our case here. If this is the cause of the infarction and necrosis of the myocardium here, then there is no organic occlusion of the coronary artery or its branches.

It is a well-known fact that functional spasm of the coronary tree can produce considerable cardiac pathology. There was a case reported some years ago in the Centrablatt für allgemeine Pathologie in which a woman about 70 came to visit a hospital in Berlin one morning, was told her husband had died during the night and fell over dead. The shock of learning of her husband's death was enough to produce a rupture of her left ventricle. At autopsy there was a marked necrosis with rupture of the ventricle but no occlusion of the coronary artery or its branches. This was explained entirely on a functional basis. Not very long ago I happened to be talking to a doctor in town here about the case of this woman in Berlin and he said, "Yes, I know about that case. I was working at that hospital at the time and happened to be present when the woman dropped dead."

Thus you see that a tremendous amount of change in the heart can be produced on a so-called functional basis. Of course the pulmonary infarcts here are due to emboli.

Question: What was the duration of this case?

Dr. V. Levine: Symptoms were of about two weeks duration.

Question: Do you believe that it was an embolic affair two weeks ago?

Dr. V. Levine: I think the emboli occurred in the last few days but the affair in the heart was older. He was ill for about two weeks and I am inclined to think that the original pain was cardiac. Apparently this condition was older than two weeks judging from the amount of myocardial fibrosis. I will admit, however, that the pain may not have been cardiac since the infarction of the heart was only in the septum and did not involve the surface of the heart. The pulmonary infarcts with their overlying pleurisy may have caused some of the pain, altho the chances are that fluid was already present in the pleural cavity at the time of infarction; this would prevent pleural friction and presumably also pain.

Question: Are spasms ordinarily associated with normal or low blood pressure?

Dr. V. Levine: There is a certain amount of spasm of the vascular tree present in everybody all the time. This is almost axiomatic since not all the capillaries and arterioles carry blood at one time but some close and others open alternately. Apparently all that happens in the hypertensive case is that the amount of the spasm is intensified and may produce definite organic changes.

Dr. M. P. Orloff: There were no other findings at all at any time. When I saw the patient at home, he seemed to have a pleurisy and I think his pain was all pleuritic. He did poorly, however, and was brought in to the hospital where his physical and x-ray findings seemed to point to a pneumonia and pleurisy.

Question: Is it not true that you get a hemolytic icterus following a pulmonary infarct?

Dr. V. Levine: Yes, that is true.

Question: You will also get the icterus index to rise in a pneumonia patient. Was there any blood found in the sputum?

Dr. V. Levine: It is also possible for the icterus index to rise in a pneumonia patient. Therefore it could not have been used here to distinguish between infarction and pneumonia. The usual medium-sized pulmonary infarcts will produce blood in sputum. I can't explain why this case did not.

CASE 2 — MULTIPLE EMBOLISM

Dr. L. Weisskopf: This patient was a 64 year old white woman. She was first admitted with complaints of gastric upset of 1 to 2 days duration and shortness of breath of an unknown duration. She had been in good health until the last few years when she became nervous following family difficulties. On examination she appeared undernourished. The thyroid gland was enlarged and nodular. There was a heart irregularity with a pulse deficit. She had pain in the upper abdomen; the abdomen was distended with fluid. There was some pitting edema of the lower extremities.

The diagnosis was organic heart disease with auricular fibrillation and marked decompensation.

An electrocardiogram showed myocardial damage, auricular fibrillation and a pattern compatible with advanced arteriosclerotic heart disease.

While in the hospital she complained of some backache and was constipated. She was somewhat uncooperative and had occasional nausea and vomiting. She was discharged somewhat improved after 4 weeks.

Four weeks later while at home she arose early one morning to go to the bathroom. Following this she was seized with sudden severe excruciating pain in her right leg which became cold and cyanotic in its lower half. Four hours later I saw her at home and considered the diagnosis of embolus to an artery most likely because of the history of auricular fibrillation, the sudden onset and the physical findings. She was taken into the hospital two hours later where conservative treatment was decided upon because of her poor condition. Consultation confirmed the diagnosis and an injection of the 2d, 3rd, and 4th right lumbar sympathetic ganglia with novocaine and eucupine was performed.

She improved somewhat, although gangrene of the foot began to develop; six days after the sudden onset of the pain, the right lower extremity was amputated thru the lower third of the thigh. Examination of the amputated leg disclosed an embolus occluding the popliteal artery at the level of the knee. At first she improved but soon she went downhill, the stump became gangrenous and markedly swollen and crepitant. She died 17 days after the amputation and about 2½ months after her first admission. In the last few days she had pain in the left upper quadrant.

Dr. V. Levine: At autopsy this patient was still fairly well nourished. She was icteric and the right lower extremity was amputated in the lower third of the thigh. The tip of the stump was black and the incision was gaping.

The heart weighed 430 gms. The myocardium was softened. The chambers were dilated. In the left auricular appendage there were a number of adherent blood clots. The mitral valve had a moderate fibroplastic deformity so that only two fingers could be passed thru the valve.

The spleen was adherent to the stomach, the tail of the pancreas and the diaphragm. It appeared to be quite fluctuant and much fluid escaped on incision. Here is the splenic artery; 8 cm. from its origin its lumen is occluded by a purple and purple-gray, non-adherent blood clot. The splenic vein was free from obstruction. This is a large, softened infarct of the spleen.

The common iliac, external iliac and femoral arteries, as you can see, are occluded by a blood clot. You can see that the wall of the popliteal artery from the surgical specimen is smooth and near one end there is a definite embolus.

Anatomic Diagnosis: Moderate fibroplastic deformity of the mitral valve with moderate stenosis; eccentric hypertrophy of the heart; mural thrombi in the left auricular appendage; emboli to the popliteal artery and splenic artery produced respectively the gangrene of the right lower extremity, and the infarction of the spleen.

DISCUSSION

The autopsy and the surgical specimen verifies the clinical findings; the surgical specimen reveals the embolus to the popliteal artery and the autopsy discloses the embolus to the splenic artery. The presence of these thrombi in the auricular appendage is just an anatomic indication of cardiac decompensation. They were formed in the heart and later thrown out as an emboli.

As to the surgical specimen, in most of the amputated legs with gangrene there is a sclerosis of the popliteal vessels, but in this case the popliteal artery was somewhat smooth. I was somewhat disappointed on seeing this and had visions of being unable to explain the gangrene. On opening the artery down to the popliteal space, however, the embolus, which is only 2 cm. long, was found.

CASE 3 — ACUTE ENDOCARDITIS ENGRAFTED ON AN OLD DEFORMITY

Dr. L. Weisskopf: This patient was a 58-year old man, had not been feeling well for about 8 months and had lost about 40 lbs., although he still weighed 179 lbs. on entrance. His main complaints had been weakness, paroxysmal, nocturnal dyspnea, orthopnea and insomnia. These complaints really dated back 8 years with a gradual onset. He was apparently compensated, however, until 5 months ago.

Physical Examination: His B/P was 140/80; T 97; P 72 and R 28. His heart was markedly enlarged and irregular with the suggestion of a murmur at the apex. He was somewhat cyanotic and had a slight edema of the legs. He was still so obese that the question of abdominal fluid could not be determined.

Diagnosis: Organic heart disease with decompensation.

An electrocardiogram disclosed major myocardial damage and auricular fibrillation. He continued to be poor in the hospital, went gradually downhill and died rather suddenly 9 days after entrance.

Dr. V. Levine: At autopsy this patient was still quite obese. The abdominal cavity contained about 1000 cc. of a clear fluid.

The heart weighed a mere 720 gms. The aortic valve had a very marked fibroplastic deformity and on top of this old change there are a number of recent acute vegetations which vary from 2 to 3 mm. in diameter. The coronary arteries are markedly calcified. Nothing else of real interest was found. The liver and spleen exhibit passive congestion.

Anatomic Diagnosis: Early malignant endocarditis engrafted on old fibroplastic deformity of the aortic valve; marked eccentric hypertrophy of the heart; moderate sclerosis of the aorta and coronary arteries; chronic passive congestion of the liver and spleen; ascites.

Question: What was his temperature?

Dr. V. Levine: His temperature was always subnormal. In the subacute form of endocarditis fever is often absent or insignificant at first.

Dr. M. A. Weiskopf: This man was a patient of mine for about 40 years. About 35 years ago he contracted syphilis and was one of the early patients treated with 606. He had to be taken in to the hospital to be given the injections. This was before the time of Wasserman tests so that we do not know what his Wasserman was originally. In his last illness the Wasserman was negative and it is very interesting to note that there were no signs of syphilis at the autopsy.

CASE 4 — CARCINOMA OF THE STOMACH

Dr. Anton Vleek: Patient entered the hospital on August 2, 1941 with complaints of being unable to retain any food for the past week. She also complained of a loss of appetite, loss of weight and a feeling of weakness. Remainder of history was essentially negative.

Physical Examination revealed a fairly well-nourished white female, 70 years of age, acutely ill, rather restless and complaining of some pain in epigastric region. Temperature, 101; Pulse, 100; Respiration, 26. Chest examination showed a murmur over the mitral area. Blood Pressure, 150/80. The abdomen was distended. There was a dullness over the epigastric region and a large palpable mass was present in the epigastric area. There was marked edema of both lower extremities.

Laboratory Findings: On 8/3/41 Hemoglobin 77%; R B C 4,460,000. On 8/21/41 Hemoglobin 84%; R B C 4,480,000; Urine and Wasserman were negative.

Course: When patient entered she was confused, had weak pulse and temperature of 101; pulse 100. However, she soon felt better, temperature became normal and patient even got out of bed and sat and walked around. Treatment was chiefly Sippy diet and fluids. Then about one month later she began to have emesis; refused to take here feeding, became markedly restless and noisy and temperature began to rise. She began to require a sedative and slowly failed until on the day before death she went into a coma and never recovered. She died 43 days after entrance, with the diagnosis of carcinoma of the stomach.

Dr. V. Levine: At autopsy this patient was still fairly well nourished. On opening the abdomen the entire epigastrium and lesser peritoneal cavity was filled with a firm mass adhering to the spleen, transverse colon and posterior abdominal wall. On dissecting out this mass it was seen to center around the stomach; the large cancer is somewhat fungating and infiltrates the entire wall of the stomach and the pancreas; it has become attached to the spleen.

The heart weighed 400 gms. The kidneys show a degree of benign nephrosclerosis, expected in a woman of 70.

A section of the stomach under the microscope discloses a tumor of the so-called medullary type with large sheets of rather immature cells with very scattered stroma.

Anatomic Diagnosis: Ulcerated, fungating, medullary carcinoma of the stomach; adhesions to the spleen, pancreas, omentum, transverse colon and the posterior abdominal wall due to infiltration of carcinoma; congestion of the right lung; advanced sclerosis and calcification of the abdominal aorta; eccentric hypertrophy of the heart.

DISCUSSION

No distant metastases were found. The case is interesting because of the large size of the primary tumor and adjacent infiltration, with no distant metastases. This is the type of case which has a good prognosis with early diagnosis and operative removal.

SCALENUS ANTICUS SYNDROME (BRACHIAL NEURITIS)

(Exum Walker, Atlanta, in *Jour. Med. Assoc. of Ga.*, Aug.)

The scalenus anticus syndrome occurs with frequency, but often it is not recognized. It is the commonest form of brachial neuritis, the symptoms of which can be promptly relieved.

The symptoms result from mechanical irritation of the brachial plexus as it passes over the first rib, between the scalene muscles. Contributing factors are movements of the upper extremity, and local anatomic and postural relationships affecting the brachial plexus.

If, in any part of the distribution of the brachial plexus, there is pain which is aggravated by using the arm in certain positions, and tenderness is present over the supraclavicular region, the scalenus anticus syndrome is the most likely diagnosis.

Compression of nerve roots by the herniation of a cervical intervertebral disc, or by arthritis of the cervical spine, produces a very similar clinical picture, and must be differentiated. Other conditions to be considered are spinal cord tumor, syringomyelia, Raynaud's disease, subacromial bursitis, and tumor of the brachial plexus.

Surgical section of the scalenus anticus muscle results in prompt relief of pain. This can be accomplished through a small incision, and requires hospitalization for only three or four days.

FEAR, RAGE AFFECT VISION, NEW EXPERIMENTS REVEAL

Science confirms your idea that rage or fear can "blind" you. Experiments by Dr. E. I. Strongin, Mrs. N. Bull, and Dr. B. Korchin of the College of Physicians and Surgeons, Columbia University, show that vision is not the same when you are under emotional strain as it is when you are relaxed.

Motion pictures taken of the eyes of persons reading showed that while 36 per cent of them could see better, when emotionally roused, another 22 per cent became worse under the strain.

More critical was the test of how the two eyes work together. This is important for the motorist who is trying to gauge the speed of an approaching car, or for the airplane pilot who is bringing his ship in for a landing. It is essential for the perception of distances and depth.

From 14 per cent to 22 per cent of those tested became worse in this binocular functioning under stress of emotion. Only 4 per cent improved under the excitement.

Men whose duties will require them to use their eyes under powerful emotional strain as in fighting or any hazardous situation, should have their vision tested under emotion, not while they are sitting calmly in the quiet of a doctor's office, these scientists recommended.

Psychologists are reminded that many of the crashes which involve army pilots occur when the flyer is returning from an exciting and fatiguing flight and tries to land his speeding plane in a small field. In this sort of situation, ability of the eyes to work together is put to severes test. — *Science News Letter.*

SERVICE

"So you complain of finding sand in your soup?"

"Yes, sir."

"Did you join the Army to serve your country, or complain about the soup?"

"To serve my country, sir — not to eat it."— *The Highway Traveler.*

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

POST GRADUATE CONFERENCE.

A very interesting program is being arranged for the doctors of the 6th Councilor District in connection with the Post-Graduate Conference to be held at Quincy, Illinois on April 23rd.

The meeting will be held at the Lincoln-Douglas Hotel, Quincy, starting promptly at 1:30 and continuing through until 5:15. The doctors of the Adams County Medical Society will entertain visiting physicians at a social hour from 5:15 to 6:00 when dinner will then be served. The evening meeting is being devoted to a discussion of the war problems facing medicine.

The program is as follows:

1:30-2:15 — "Painful Feet" — Walter R. Fischer, M. D., Instructor Orthopedic Surgery, University of Illinois College of Medicine

2:15-3:00 — "Blood Dyscrasias" — Henry George Poncher, M. D., Associate Professor of Pediatrics, University of Illinois College of Medicine

3:00-3:45 —

3:45-4:30 — Arkell M. Vaughn — "Treatment of Shock."

4:30-5:15 — Round Tables — the above speakers will meet with groups of doctors for informal discussions and questions

5:15-6:00 — Visiting physicians guest of Adams County Medical Society at a social hour

6:00 — Dinner

7:00 — War Medicine — Charles H. Phifer, M. D., President of the Illinois State Medical Society and Chairman of the 6th Corps Area for the Procurement and Assignment of Physicians

Harold M. Camp, M. D., Secretary of the Illinois State Medical Society and Chairman of Illinois for the Procurement and Assigment of Physicians

Doctor H. O. Collins, President of the Adams County Medical Society will act as Chairman. Invitations are being sent to all physicians in surrounding counties and a cordial welcome is extended.

This program is the ninth Post-Graduate Conference sponsored by the Post-Graduate Committee of the Illinois State Medical Society, Robert S. Berghoff, Chairman, in cooperation with the Councilor Districts of the State Medical Society during the winter of 1941 and the spring of 1942.

The following Auxiliaries to county medical societies of Illinois were awarded cash prizes in the Hygeia Contest conducted by the American Medical Association:

Auxiliaries with a membership of 24 to 42 — Third Prize of $15.00 was awarded to Vermilion County, Mrs. C. L. Bennett, Danville, Chairman.

Auxiliaries with a membership of 43 to 600 — 3rd Prize of $15.00 was awarded to Cook County, Mrs. Clyde R. Landis, Chicago, Chairman.

State Winner — 2nd Prize of $25.00 awarded to Illinois, Mrs. E. M. Egan, Chicago, Chairman for the state.

Honorable mention was given to Rock Island County and Sangamon County.

The Logan County Medical Society entertained the dental profession of the County at a dinner meeting on March 26th at which time Dr. L. R. Main of the St. Louis University School of Dentistry spoke on "Reflex Complications of Dental Origin."

The March issue represents the Fifteenth Annual "Radium Number" of the Mississippi Valley Medical Journal and Radiologic Review. The issue contains many original articles written by well known radium therapists, among these are Kaplan of New York University, Pohle of the University of Wisconsin, Rosh of Bellevue Hospital, New York, and Harold Swanberg of Quincy, Illinois.

Francis L. Lederer of Chicago has been invited to address the Medical Society of the State of New York in New York City on April 28th, subject "Otosurgical Deficiencies."

M. A. Perlstein addressed the Illinois Chapter of the American Physiotherapy Association in Chicago on April 1st.

The Educational Committee of the Illinois State Medical Society has made arrangements to schedule health programs for the various civic clubs of Springfield meeting during the week of the Annual Meeting. A number of radio programs are also being scheduled.

The Scientific Service Committee, Robert S. Berghoff, Chairman, is offering special programs in the field of Cancer, particularly Gastric Cancer, to all county medical societies of the state.

COMING MEETINGS

April 6 — Hancock County — Carthage — 7:30 P. M. — Program on Industrial Medicine and Surgery

April 7 — Williamson County — Herrin Hospital, Herrin — 8:00 P. M. — Program on Obstetrics

April 9 — 10th Councilor District Post-Graduate Conference, Belleville

April 10 — Jersey-Greene County — Jerseyville — William M. Hartman — "Some Things The General Practitioner Should Know About Industrial Medicine and Surgery"

April 10 — Will-Grundy — 12:00 noon, Louis Joliet Hotel, Joliet

April 14 — Bureau County — Perry Memorial Hospital, Princeton — 6:30 P. M. — Clifford J. Barborka — "Medical Management of Gall Bladder Disease"

April 14 — Effingham County — Benwood Hotel, Effinghan — 7:30 P. M. — Nathan S. Davis — "Subclinical Nutritional Deficiency"

April 14 — Tazewell County — Illinois Hotel, Pekin — 6:00 P. M. — Roswell T. Pettit — "Pulmonary Silicosis, Importance, Advantages and Limitations of X-Ray Examination"

April 14 — Kankakee County — Noon, Kankakee —

April 15 — Christian County — Taylorville — 6:00 P. M. — E. P. Coleman — "Crushing Injuries of the Chest and Abdomen"

April 16 — Jackson County — Roberts Hotel, Carbondale — 6:30 P. M. — Program on Obstetrics

April 17 — Will-Grundy County — 12:00 noon, Louis Joliet Hotel, Joliet — Robert H. Herbst — "Some of the Unusual and More Dangerous Forms of Prostatic Obstructions"

April 23 — 6th Councilor District Post Graduate Conference — Quincy, Lincoln-Douglas Hotel, starting at 1:30 P. M.

April 24 — Will-Grundy County — 12:00, Louis Joliet Hotel, Joliet — Edward L. Compere — "Treatment of Fractures"

MARRIAGES

Eugene Livingstone Vickery, Lena, Ill., to Miss Millie Margaret Cox at Sheridan, Ind., Dec. 21, 1941.

Edward Paul Sheriden, Sumner, Ill., to Miss June Russell of Harvey in January.

DEATHS

Claud R. G. Forrester, Chicago; Bennett Medical College, 1902; research work at Edinburgh University at Scotland, and was a Major in the British Army for 18 months. He was on the surgical staff of the Chicago Memorial and Edgewater Hospitals, and a life member of the American Medical Association of Vienna. He died February 27, 1942 at the age of 62.

Wallace F. Grosvenor, Chicago; Rush Medical College, 1900. Was attending obstetrician and gynecologist at Ravenswood Hospital. Died March 3, 1942 at the age of 72.

William H. Hersh, Chicago; Harvey Medical College, 1902. Died March 6, 1942, aged 73.

John J. Killeen, Chicago; University of Illinois College of Physicians and Surgeons, 1905; Hon. Degree L.L.D., National University of Ireland, Dublin, 1934. He was a captain in the medican corps during World War 1. He was attending consultant in diseases of the Ear, Nose and Throat to Marine Hospital No. 5, U.S.P.H.S.; laryngologist to the Chicago City Opera Company. Died March 17, 1942, aged 67.

Harry A. Paskind, Evanston; University of Illinois College of Medicine, 1920. Associate Professor of nervous and mental diseases, Northwestern University Medical School; attending neurologist, Evanston Hospital; member Association for Research in Nervous and Mental Diseases, Central Neuropsychiatric Association. Died of a heart attack, March 24, 1942, aged 45.

Emanuel Taft, Chicago; University of Illinois College of Medicine, 1931. Associate in obstetrics and gynecology, Lutheran Deaconess Hospital; Staff Mt. Sinai and Michael Reese Hospitals. Died March 1, 1942, age 34 years.

Edward Miers, Des Plaines; Kentucky School of Medicine, Louisville, 1905; Staff member of St. Mary of Nazarene Hospital. Died March 14, 1942, aged 65.

Samuel D. Houston, Polo; Chicago College of Medicine and Surgery, 1886. Died of a heart ailment in March at the age of 84.

Richard R. Worthington, Indianola; Medical College of Ohio, 1874. Prominent physician and druggist of Indianola for 62 years, died February 23, 1942 at the age of 90.

Willard Thompson, Dixon; Hahnemann Medical College, 1910; post-graduate work in Philadelphia and Vienna and was an eye, ear, nose and throat specialist. He was a 32nd degree Mason, a past Exalted Ruler of Dixon Elks lodge and Past Commander of Dixon Post No. 12, American Legion. Died March 1, 1942 of coronary thrombosis at the age of 59.

Harry O. Taylor, Anna; National University of Arts and Sciences Medical Department, St. Louis, Missouri, 1918. Was president of the Union County Medical Society in 1941. Died February 13, 1942 at the age of 61.

Grace Allen Graves, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1901; aged 67; died January 26 of chronic myocarditis.

Ranney Yale Lyman, Chicago; Northwestern University Medical School, Chicago, 1940; Elizabeth J. Ward fellow in radiology at his alma mater; aged 33; died, Dec. 22, 1941, at his home in Helena, Mont., of chronic hepatitis.

George Boyd Dyche, Wheaton; Northwestern University Medical School, 1897. Died March 16, 1942, aged 69 years.

J. F. Jones, LeRoy; School of Medicine of the University of Colorado, 1894; post-graduate work in Boston and Philadelphia. Died March 16 at the age of 81.

Henry W. Smith, Roodhouse; University of Illinois College of Medicine, 1894. Died of a heart ailment on March 12, 1942, aged 75 years.

George A. Remington, Chicago; American College of Medicine and Surgery, 1905. Died March 26, 1942 at the age of 62.

YESTERDAY, TODAY, AND TOMMOROW

There are two days in every week about which we should not worry — two days which should be kept free from fear and apprehension.

One of these days is yesterday with its mistakes and cares, its aches and pains, its faults and blunders. Yesterday has passed forever beyond our control.

All the money in the world cannot bring back yesterday. We cannot undo a single act we preformed; we cannot erase a single word we said. Yesterday is gone.

The other day we should not worry about is tomorrow with its possible adversities, its burdens, its large promise and poor performance. Tomorrow also is beyond our immediate control.

Tomorrow's sun will rise either in splendor or behind a mask of clouds — but it will rise. Until it does, we have no stake in tomorrow, for it is as yet unborn.

That leaves only one day — today. Any man can fight the battles of just one day; any woman can carry the burdens of just one day. It is only when you and I add the burdens of those two awful eternities — yesterday and tomorrow — that we break down.

It is not the experience of today that drives men mad — it is remorse or bitterness for something which happened yesterday and the dread of what tomorrow may bring. Let us, therefore, journey but one day at a time.—*L. H. P. in the Pennsylvania Med. J.*

A simple method for correction of angulation in fractures of long bones is presented. The well-known principle of "cast wedging" is used, making use of measurements taken by the roentgenologist. Only one cast application is necessary and fractures of long bones may be set accurately.— *The Journal of the Michigan State Medical Society.*

I find the great thing in this world is not so much where we stand so much as in what direction we are moving.—*Oliver Wendell Holmes.*

Are the Neuritic Symptoms of Pregnancy *due to a deficiency of vitamin B_1 (thiamine)?*

SUCH common neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and (less frequent but more serious) paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Although neuronitis of pregnancy has long been considered a toxemia, no toxins have ever been identified.

Clinical observations of Strauss and McDonald lead to the conclusion that the condition is a dietary deficiency disorder similar to beriberi, caused by lack of vitamin B_1. They report recovery in their cases receiving this therapy, including dried brewers' yeast.

Hyperemesis as Cause of Avitaminosis

Wechsler observes that all cases of polyneuritis of pregnancy recorded in the literature were preceded by long periods of severe vomiting. "It would seem," he adds, "that because of actual starvation these patients suffered from avitaminosis and consequent neuritis," a view likewise held by Hirst, Luikart, and Gustafson. Plass and Mengert observe that the practice of giving high carbohydrate feedings for hyperemesis gravidarum is still more likely to cause avitaminosis.

Dried brewers' yeast, as it is far richer than any other food in vitamin B_1 (thiamine), is being used with benefit both in the prevention and treatment of polyneuritic symptoms of pregnancy. Lewy found that additions of yeast to the diet reduced electric irritability of the peripheral nerves and brought clinical improvement. Vorhaus states that he and his associates, after administering large amounts of vitamin B_1 (thiamine) to 250 patients having various types of neuritis, including that of pregnancy, observed in about 90% of cases "varying degrees of improvement, i.e., from partial relief of pain to complete disappearance of all symptoms."

Need for Vitamin B_1 (thiamine) in Lactation

Evans and Burr, Hartwell, Sure and co-workers, and Macy *et al* are among numerous authorities who find that the nursing mother also needs a supplement of vitamin B_1 (thiamine) from 3 to 5 times the normal requirement. It is accepted that during pregnancy and lactation the requirement for vitamin G (riboflavin) is increased.



Consisting of nonviable yeast, Mead's Brewers Yeast Tablets offer not less than 50 International vitamin B_1 (thiamine) units and 50 Sherman vitamin G (riboflavin) units per gram (20 International units of vitamin B_1 and 20 Sherman units of vitamin G per tablet).

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Book Reviews

FUNCTIONAL PATHOLOGY. By Leopold Lichtwitz, M.D., Chief of the Medical Division of the Montefiore Hospital; Clinical Professor of Medicine, Columbia University, New York. Price $8.75.

All bodily functions are interrelated and diagnosis and therapy calls for a detailed analysis of the systemic reaction of the patient. This reaction naturally varies with age, sex, environmental conditions, and other essential underlying factors. The relationship of each organ to the body as a whole is given paramount consideration in this book.

The book was written after a long period of successful practice on the part of the author in Europe, then later in America. He states that "Functional Pathology is the science which analyses the mechanism of symptoms and signs of disease," or the science of pathological manifestations during life.

In his characteristic manner the author first discusses the subject endocrinology, then heat regulation, regulation of metabolism body water, and the regulation of carbohydrate metabolism. A considerable amount of space is devoted to the functional pathology of the thyroid gland emphasizing the mechanism of the manifestation of Graves Disease and the interrelations between the thyroid and other glands.

The mechanism of the systemic defense against certain diseases is well discussed with special chapters on arthritis, gout and obesity. The various skeletal disorders are likewise well presented. The chapters on regulation of blood pressure and the mechanism of arterial hypertension, and essential hypertension are quite interesting.

The author states that "the treatment of patients with high blood pressure is simple, but requires great skill in its execution in order to avoid high blood pressure phobia." Although unusually able to change the circumstances, efforts should be made to influence the reaction of the patient by teaching him the art of living and indicating the relatively small importance of his troubles as compared with the importance of preserving health. This is characteristic of the type of philosophy the author injects in his well written work.

The reviewer is firm in his opinion that although perhaps some statements of the author may be subjected to criticism, as he deals with controversial subjects, yet it should be quite popular and a valuable addition to the libraries of those who like well written books which are not compiled in accordance with the usual textbook pattern.

OCCUPATIONAL DISEASES, Diagnosis, Medicolegal Aspects and Treatment. By Rutherford T. Johnstone, A.B., M.D., Director of the Department of Occupational Diseases, Golden State Hospital, Los Angeles, California; Formerly Assistant Professor of Medicine, University of Pittsburgh School of Medicine. W. B. Saunders Company, Philadelphia, Price $7.50.

Much attention has been given in recent years to the occupational hazards in industry which may affect the health of the worker. New laws protecting the workers have been passed in most states which have caused the industries and their medical personnel to pay more attention to these hazards and endeavor in every way possible to avoid their consequences.

The author discusses in the first three chapters of this book the purposes and administration of workmen's compensation, and the function of the physician in its relation.

Then the gases-solvents fumes, the metals, dusts and other articles which may be responsible for the development of industrial diseases are thoroughly considered.

The medicolegal relationship of trauma to disease is well covered, and the problem of the maligners and their detection is discussed in some detail.

The book contains much information which should be of interest especially to the industrial physician and surgeon as well as those who care for employees of small industries or business organizations on a part time basis.

IMMUNOLOGY. By Noble Pierce Sherwood, Ph. D., M.D., F.A.C.P., Professor of Bacteriology, University of Kansas, the Pathologist to the

(Continued on page 30)

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** *Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154.*

BOOK REVIEWS (Continued)

Lawrence Memorial Hospital, Lawrence, Kansas. Second Edition. The C. V. Mosby Company, St. Louis. Price $6.50.

The author has completely revised this second edition of his book which was primarily written for the student and others who have been trained in the subjects of infection, resistance to disease, and those particularly relative to the many problems of immunology.

More attention is given in this volume to the consideration relative to the reticulo-endothelial system and its importance in immunologic studies.

New chapters on hypersensitivities have been added while some discussions which appeared in the original volume have been deleted. The ever interesting problems pertaining to infection and body resistance to disease are given much consideration.

The index is well arranged to make this a popular hand book on the subjects therein discussed, which should be of material value to the student as well as the busy practitioner who desires such information on short notice.

Medical Clinics of North America. *Chicago* Number. January, 1942. W. B. Saunders Company.

This is an all-Chicago number of this interesting series of "Medical Clinics" and as usual, covers an extensive list of subjects. Especially featured is a symposium on treatment of common skin diseases which is always of interest to the average physician.

Thirteen clinicians participate in this symposium making it well worth the reading time for any physician.

Then, there are interesting discussions on gynecologic office procedures, congenital hemolytic anemias, the irritable colon, common disorders of the respiratory tract in infants and children, and several other equally interesting subjects.

This number compares favorably with the other "Clinics" in the series and should be of general interest to many physicians.

Treatment of the Patient Past Fifty. By Ernst P. Boas, M.D., Associate Physician, Mount Sinai Hospital, New York City; Chairman, Committee on Chronic Illness, Welfare Council of New York City; Assistant Clinical Professor of Medicine, Columbia University. Price $4.00.

The subject of geriatrics has been receiving more well deserved attention in recent years, and although the considerations in this book are not entirely pertaining to the aged, yet they do give consideration to those past fifty, which of course includes the aged. It is generally known today that a large part of the work of the physician is in dealing with patients who have reached the age of fifty which is indeed a marked change from the average practice of a few decades ago.

The author considers old age not as a disease, but merely a cycle in life. One of the chief endeavors on the part of the attending physician is to try in every way possible to keep the patient past fifty in a condition to enable him to carry on for more years to come. At this time it is quite important that the older men assume responsibilities of the younger men who are in service, and it is becoming more essential for the medical profession to do everything possible to keep these older men in working condition.

It is quite obvious to all that the diseases of the older age groups are less of the infectious types and more of a degenerative nature. Realizing that cardiovascular and allied conditions make up a large part of the diseases among the group past fifty, the author devotes a considerable portion of this interesting book to their consideration.

Likewise those other degenerative troubles frequently seen in the aged, are thoroughly discussed; among these are the several types of bone and joint troubles, diseases of the endocrine system, diabetes, the eyes, neuro-psychiatric, and other troubles.

The book is well written and should meet with the general approval of many physicians dealing with patients in this age group who are invariably anxious to keep in touch with progress and learn everything possible in their desire to give adequate and sincere service to them.

Nutritional Deficiencies. Diagnosis and Treatment. By John B. Youmans, A.B., M.S., M.D., Associate Professor of Medicine and Director of Post-graduate Instruction, Vanderbuilt University Medical School, Nashville, Tennessee; Assisted by E. White Patton, M.D. J. B. Lippincott Company, Philadelphia. Price $5.00.

Following the recent endeavors of governmental agencies and leaders in the field of nutrition in this country to show the need for properly balanced diets, this book should be of especial interest to many readers. During recent years the public as a whole has depended largely upon advertisements over the radio and through the press to give them information as to their vitamin deficiencies, then they have followed the advice given by the commentators, and have gone to their druggist for a combination of perhaps several of the vitamin products which have been recommended.

Disease due to the deficiency of certain essential food elements is a relatively new consideration, and the last word has not yet been said on this controversial subject. Beginning with the status of defi-

(Continued on page 32)



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ADDRESS

BOOK REVIEWS (Continued)

ciency diseases, the author has discussed in detail such important subjects as Vitamin A, Thiamin, Nicotinic Acid, Riboflavine, Vitamins C, D, E, and K deficiencies, giving the history, nature and function, pathology and pathogenesis, incidence, symptoms and signs, diagnosis and treatment for each of these deficiencies.

Then various other nutritional deficiencies such as iron, calcium, and iodine, are considered in similar detail. A summary of the Vitamins and the laboratory diagnosis of deficiencies are discussed and a number of interesting tables are to be found in the book.

Although the author realizes that changes are being made daily in the many considerations of this important subject, he has endeavored to give the present day knowledge and beliefs which have been generally accepted by the leading nutritionists.

MEDICAL DISEASES OF WAR. By Sir Arthur Hurst, M.A., D.M., Oxon., F.R.C.P., Lieutenant-Colonel, Late R.A.M.C.; Lecturer on Clinical Medicine University of Oxford, and Consulting Physician to Guy's Hospital; Late Officer Commanding Seale Hayne Hospital for Functional Nervous Disorders, Member of Medical Advisory Committee, Mediterranean Expeditionary Force, and Consulting Physician to the Salonica Army. With the cooperation of H. W. Barber, M.A., M.B., Cantab., F.R.C.P., Physician-in-charge of Skin Department Guy's Hospital; H. B. F. Dixon, M.D., M.D., Dub., D.T.M. and H., F.R.C.P., Lieutenant-Colonel (temporary Colonel) R.A.M.C.; F. A. Knott, M.D., Lond., M.R.C.P., Bacteriologist to Guy's Hospital; T. A. Ross, M.D., Edin., F.R.C.P., Late Medical Director of Cassel Hospital for Functional Nervous Disorders; and Arnold W. Stott, M.A., Cantab., F.R.C.P., Colonel R.A.M.C., Late Consulting Physician to the British Expeditionary Force; Physician to Westminster Hospital. The Williams & Winkins Company, Baltimore. Price $5.50.

The first edition of this book was written in 1916 at a time when the author had the opportunity to study the war diseases as physician and neurologist to a number of military hospitals.

The second edition was written two years later after he had gained much experience, and received first hand information on medical diseases of war. A few months later he had sufficient material available for a third edition, but the Armistice made this unnecessary. Now that another great war has been

under way for more than two years, the author has brought out a new edition which is entirely up to date.

He discusses thoroughly the war neuroses and the many disabling conditions seen in warfare as a result of many things including that important factor of carelessness at the induction station. There many men are inducted into service who have inherited certain neurological tendencies which may be responsible for "shell shock," anxiety neuroses, and various types of hysterical and functional disorders.

In the book, the author covers the field of diseases encountered in soldiers, and it should be very popular to the many physicians and health workers who are interested in these conditions during the greatest of all World Wars.

THE TOXEMIAS OF PREGNANCY. By William J. Dieckmann, M.D., Associate Professor of Obstetrics and Gynecology, The University of Chicago; Attending Obstetrician, The Chicago Lying-in Hospital and Dispensary; Attending Gynecologist, Albert Merrit Billings Memorial Hospital of the University of Chicago; Associate Editor of the American Journal of Obstetrics and Gynecology; Co-chairman of the Conference on Eclampsia, United States Department of Labor, Children's Bureau, 1941. The C. V. Mosby Company, St. Louis. Price _____.

The author in this monographic work has endeavored to give up-to-the-minute information concerning one of the oldest problems in obstetrical practice, the etiology, early recognition and proper treatment of toxemias of pregnancy. A great deal of work has been done in the assembling and correlating of this data which should be of great interest to all obstetricians, and others doing a moderate amount of obstetrical work.

The physiology of pregnancy and its problems, then the general gradation from normal to abnormal, or when pathology actually enters the picture, is well brought out by the author.

The section on "The Treatment of the Toxemias of Pregnancy" should be of much interest to all physicians dealing with pharmacodynamics, procedures and methods of treatment, termination of pregnancy, the obstetric treatment of eclampsia, and the obstetric treatment of nonconvulsive toxemia of pregnancy.

Many interesting tables are found in this volume, and a few illustrations and graphs to increase its value to the reader. The book should be of particular interest to obstetricians and those who are interested in the more recent developments in several of the most controversial subjects in the field of obstetrics.

(Continued on page 34)

BILE ACID THERAPY

In Cholecystitis

The intensified flow of thin liver bile produced by Decholin (dehydrocholic acid) encourages removal of inspissated accumulations from the bile passages and facilitates biliary tract drainage. Subjective relief usually follows its administration; not infrequently objective improvement is discernible roentgenologically.

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1. Jenkinson, E. L.: J. A. M. A. 107:755 (Sept. 5) 1936.

BOOK REVIEWS (Continued)

Surgical Practice of Lahey Clinic, Boston, Massachusetts. W. B. Saunders Company, Philadelphia. Price $10.00.

The introduction of the surgical practices of the Lahey Clinic should be welcomed by the physicians of this country as a valuable addition to the surgical literature, as coming from one of the outstanding clinical groups headed by one of America's master surgeons. Dr. Lahey and more than twenty of his staff have contributed in the presentation of the many fine articles appearing in the book.

The articles have previously appeared in medical Journals, but they represent literally a truly cross-section of the work done at the Lahey Clinic, and are based entirely upon clinical data developed there, and not from any other source.

A number of departments are represented in the book; among them are Surgery, Pathology, Neurosurgery, Bone and Joint Surgery, Anesthesiology Radiology, Otorhinolaryngology, Urology, Internal Medicine and Gastro-Enterology. Dr. Lahey has contributed freely in the articles presented, and those who are familiar with his work over a period of years will welcome these contributions to the present day surgical literature.

The book will of course, be of especial interest to those physicians interested in surgery, yet many men in general practice and in other specialties will be interested, as it deals with many subjects where there are both medical and surgical aspects, and the exact method of applying therapy is to a considerable extent, controversial.

This is a fine book developed under the close supervision of a truly great American surgeon, and it should be well received by the medical profession of this country.

The Treatment of Infantile Paralysis in the Acute Stage. By Elizabeth Kenny. Bruce Publishing Company, Minneapolis.

Since 1933 the author states that she has endeavored to present to the medical profession the fact that spasm is a damaging and ever-present symptom of the disease, infantile paralysis. Her first public attempt to prove her belief was made in Brisbane, Australia in 1933 with no success. Then in 1937 a second attempt was made in England with the same success. But in 1938 she was more successful in giving her demonstrations at the Convalescent Home attached to the Children's Hospital, Melbourne, Australia.

More recently, the author has been employing her methods as outlined in the book, at the City Hospital in Minneapolis under the auspices of the Departments of Orthopaedic Surgery and Physical Therapy, University of Minnesota School of Medicine. Many physicians interested in the treatment of infantile paralysis have visited the hospital in Minneapolis to make



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personal observations of the treatment as she recommends in this small book.

After relating her experiences in Australia, England and the United States and Canada, the author discusses the complications due to immobilization in anterior poliomyelitis, as well as making a comparison of treatments used especially in the early stages of the disease.

The book is written to show her belief as to the necessity for recognizing and treating early, the spasm, which if not properly treated, she states, means more disastrous results such as muscle shortening, disuse atrophy and interference of normal articulations.

The Kenny method of treatment as used by the author for many years, is presented in detail, and from recent articles from specialists who have seen her work in Minneapolis, she is beginning to believe that her efforts have not been in vain.

Books Received

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

Communicable Disease Nursing. By Theresa I. Lynch, R.N., Ed.D. Instructor in Education, New York University; Formerly Superintendent of Nurses and Director of Instruction, the Willard Parker Hospital, New York City. The C. V. Mosby Company, St. Louis. Price $3.75.

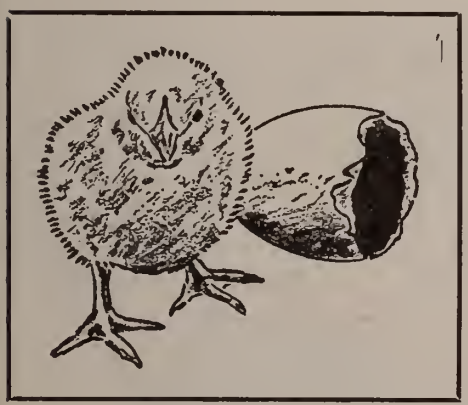
Industrial Myositis Fibrosa, Occupational Schizophrenia and Positive Non-Luetic Wassermann and Kahn Tests. By Abel C. Anthony, B.S., M.D.

A Manual of Pharmacology and its Applications to Therapeutics and Toxicology. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Sixth Edition. W. B. Saunders Company, Philadelphia. Price $8.75.

Surgery of the Ambulatory Patient. By L. Kraeer Ferguson, A.B., M.D., F.A.C.S. With a Section on Fractures by Louis Kaplan, A.B., M.D., F.A.C.S. J. B. Lippincott Company, Philadelphia. Price $10.00.

The Diseases of the Basal Ganglia. Proceedings of the Association for Research in

(Continued on page 36)



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Nervous and Mental Disease December 20 and 21, 1940, New York. The Williams & Wilkins Company, Baltimore. Price $10.00.

From Infancy Through Childhood. By Louis W. Sauer, M.D., Ph.D., Assistant Professor of Pediatrics, Northwestern University Medical School, Chicago; Harper & Brothers Publishers, New York. Price $2.00.

A Textbook of Surgery by American Authors. Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. Third Edition. W. B. Saunders Company, Philadelphia.

HOW FREQUENTLY TO RELEASE TOURNIQUET

First aid students should be taught that "in case a tourniquet is applied for the control of arterial hemorrhage, it is wise to release the tourniquet for a few minutes at thirty minute intervals," *The Journal of the American Medical Association* for February 7 advises in answer to an inquiry. "If the extremity is packed in ice, this time interval can be safely extended to one hour," it adds.

During April when two thousand tuberculosis associations aided by seven and one-half million posters and pamphlets unite their voices to urge the apparently well to visit their own physicians for a check-up to uncover hidden disease, the immediate effect may not be apparent. However, the cumulative effect of this effort, repeated yearly, may well change the emphasis of medical practice in the case of tuberculosis from treatment to early discovery and complete cure.

16 VITAMINS SURVEYED IN CURRENT LEDERLE BULLETIN

The March issue of the "Bulletin of Lederle Laboratories" which has been published quarterly for the past ten years, marks a notable departure from previous issues, in that the entire 64-page booklet is devoted to the single subject of Vitamins.

Special features of the Bulletin are full color reproductions of photomicrographs of Vitamin B_1 and Niacin crystals, taken by means of cross-polarized light, and a series of color photographs in the Lederle biological laboratories at Pearl River, N. Y., where many notable advances in the isolation and preparation of Vitamins have been made.

Subject matter has been arranged by logical groupings of the Fat-Soluble Factors and the Water-Soluble Factors, with each of the 16 Vitamins covered under individual headings under each group.

The Vitamin substances covered in this Bulletin include, Vitamins A, D, E, F, K, Thiamine Hydrochloride (B_1), Riboflavin (B_2), Niacin (Nicotinic Acid), Pyridoxine (B_6), Pantothenic Acid, Biotin, Para-Aminobenzoic Acid, Inositol Choline, Ascorbic Acid (C) and Vitamin P. In addition to authoritative surveys of these 16 known factors, there is a brief discussion of several of the unknown vitamin factors. The Bulletin, of course, includes complete bibliographies for the guidance of those wishing to study specific subjects in greater detail.

This March issue of the Lederle "Bulletin" is being widely distributed to physicians throughout the country, and is available on request to Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York, N. Y.



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SAYS JAP POLICY OF AGGRESSION INCLUDES ILLICIT DRUG TRAFFIC

Journal Of A. M. A. Terms It Another Form Of Chemical Warfare Against Chinese; Points To Its Importance To U. S.

Illicit commerce in drugs is an important part of the aggressive policy of the Japanese government, *The Journal of the American Medical Association* for February 28 declares. *The Journal* says:

"Paragraph 15 of a booklet of regulations for Japanese soldiers reads as follows:

" 'The use of narcotics is unworthy of a superior race like the Japanese. Only inferior races, races that are decadent, like the Chinese, Europeans and East Indians, are addicted to the use of narcotics. This is why they are destined to become our servants and eventually disappear.'

"The role played by the 'superior' race in the ensalvement of the other races through the use of narcotics is revealed in a statement by the Secretary of the Treasury, Mr. Morgenthau (release to the press, January 26). Commissioner of Narcotics Harry J. Anslinger reported to the secretary that he had abundant proof that Japan had defied international commitments by promoting the opium trade. The Japanese officials had three objectives in their traffic: to gain revenue, to corrupt Western nations and to weaken and enslave the peoples of lands already invaded or marked for invasion. Wherever the Japanese army goes, the drug traffic follows. This illicit commerce in 'white' drugs is more than tolerated by the Japanese government. It constitutes an important part of its aggressive policy. The extent of this traffic and the conditions engendered by it are truly appalling. According to our narcotic chief, not less than 90 per cent of all the illicit 'white' drugs of the world are of Japanese origin, manufactured in the Japanese concession of Tsientsin, in Dairen or in other cities of Manchuria, Jehol and occupied China, and this always by Japanese or under Japanese supervision. The report states that the Japanese concession in Tsientsin has become the heroin center of China proper and of the world, and it is from here that not only the Chinese race but all other countries of the world are being weakened and debauched. The Japanese consulate at Chengchow in Honan acts as a center for the

distribution of drugs. The report further states that since the invasion of North China by the Japanese all legal control of the narcotic trade has ceased to exist. This is another form of chemical warfare against the Chinese people as deadly as war gases. Japanese authorities derive revenue from this traffic to cover part of the costs of their invasion of China.

"The entire situation was aptly summed up in the statement of Lieutenant Commander Fletcher, made in the House of Commons on Dec. 22, 1938: 'Pestilence and war are historically associated with each other, but it has been left to the Japanese to find a way of making a pestilence pay for war.' This presumably is the 'order and peace' and the 'benefits of friendly collaboration' that the Japanese military are bringing to the people of China. We are directly concerned in the matter because of an alarming amount of smuggling of the 'white' drugs into the United States. The statement reveals that by one gang of traffickers alone enough heroin was smuggled into the United States to supply ten thousand addicts for one year. One shipment seized in Seattle from four Japanese totaled a million shots of morphine. To combat this illicit traffic, a law was enacted by the United States in 1935 imposing heavy fines on the master or owner of any vessel visiting our ports on which unmanifested heroin, morphine or cocaine is found."

WARNS AGAINST A DANGEROUS PROCEDURE

A warning that the treatment of ganglion, a saclike tumor on a tendon, by injection of caroid, a vegetable pepsin, is a dangerous procedure is sounded by J. Albert Key, M.D., St. Louis, in *The Journal of the American Medical Association* for February 14.

He reports the case of a patient with a ganglion on the back of her wrist into which was injected caroid and the resulting liquefied material subsequently withdrawn by suction in accordance with the procedures recommended in such use of caroid. Infection, however, developed and the patient now has a definite disability of the hand. Dr. Key says the caroid used was found to be heavily contaminated, as were two other samples of the material obtained elsewhere. He says he does not believe the sterilization of the product as recommended by the manufacturer is adequate for material which is to be injected into tissues. "If it cannot be sterilized completely without destroying the enzyme, it should not be sold for injection or implantation in wounds," Dr. Key declares.

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"SECRET SERVICE" IN PUBLIC HEALTH

Little known among public health activities is the undercover reciprocal reporting service which many of the leading official health agencies in the nation now carry on. Long recognized as a menace to the health of any community is the presence in the population of persons who unintentionally spread such germs, for instance, as the spirochetes of syphilis or the bacilli of typhoid fever.

There are at present in Illinois somewhat more than 450 persons who are known to be carriers of typhoid fever. As a part of the agreement into which all of them have entered with the Illinois Department of Public Health they are required to keep the health authorities in their communities advised as to any contemplated change in their places of residence.

The number of known fresh cases of syphilis in the State at a given moment is of course considerably larger than the total accumulated number of typhoid fever carriers. In 1940 there were 21,979 cases of syphilis reported in Illinois, and during the first ten months of 1941 nearly 19,000 cases were reported. Whenever a physician who is treating a venereal disease patient in the State advises the Department of Public Health that his patient has for some reason discontinued the treatment before its completion, the Department — or the official local health agency — attempts to make contact with the patient and to bring him under treatment again.

These two diseases are examples of the kind of personal health problem which may continue over a long period of time to have a serious community health significance. Entirely without malicious intent the affected persons may spread among the healthy population the germs which they harbor. In order to protect the well, therefore, public health authorities explain to the infected persons or carriers just what the danger is and show them how to avoid infecting others. Every practicable effort is made to keep track of the whereabouts of these people.

By a cooperative reciprocal arrangement it is customary for the health authorities that have been watching a typhoid fever carrier or an infectious venereal disease patient to notify the

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ship came into the harbor there with the report that there had been typhoid fever on board. It was believed possible that there might have been undiscovered carriers among the United States citizens who had taken the voyage, — 27 of whom gave their destination as Chicago, Illinois. These facts, together with the names and addresses of the 27 persons, were promptly sent to the Illinois Department of Public Health by the United States Public Health Service. Immediately the Department notified the Chicago Board of Health, and it was possible to seek out the people involved and to make sure that they were not carriers of typhoid fever. Had any carriers been discovered, they would have been required to sign an agreement for the protection of the health of their associates. This agreement binds the carrier to observe strict rules of personal hygiene, to refrain from handling food for consumption by the public, and so on.

Similar reciprocal reporting of such suspected carriers, or known carriers, or infected persons, between various municipalities and States is being carried on continually. It is one of the fundamentally important health services for which, as a rule, little publicity and little credit is given. All the States which, like Illinois, make it a practice to send out such essential information deserve to be commended.

"Illinois Health Messenger" Dec. 15-41

One small straw that points a dreadful wind. During the first two years of the war (England) deaths from tuberculosis increased in Glasgow about 41%. The 1941 record shows no improvement. Overwork, strain, ill-spent leisure are thought to be responsible for the rise. S. Laidlaw, M.D. and D. MacFarlane, M.D. British Med. Jour., Sept., 1941.

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"The hypothesis that respiratory infections are largely air borne is considered more satisfactory than the theory that they are spread by direct contact because of the findings along three distinct lines of study," Leon Buchbinder, Ph.D., New York, declares in *The Journal of the American Medical Association* for February 28.

He says that the first consists of evidence revealed by surveys and laboratory studies. "In the laboratory," he explains, "it has been shown that streptococci artificially sneezed into air float for relatively long periods. They settle out geometrically and, having settled, they die geometrically at rates which vary with the length of the bacterial chain and prevailing conditions of the environment. Organisms which have settled out of air may be readily resuspended therein. In the presence of sunlight and even diffuse daylight which have passed through the glass of a window, both streptococci and pneumococci on a simulated floor die at a much faster rate than they do in the dark. If the air borne route is an important vehicle for the spread of respiratory infection, then ordinary diffuse daylight in rooms may act as a strong deterrent to the spread of such infections. . . .

"Investigations of hospital infections, particularly those occurring in contagious disease hospitals, have furnished a second group of data supporting the air borne hypothesis. . . .

"The third line of evidence has been given by what might be called a therapeutic test of the air borne hypothesis. Measures designed to rid institutional environments of pathogenic (disease causing) microorganisms should also reduce the incidence of new infections therein. Sufficient laboratory evidence now exists to indicate that ultraviolet light and chemical sprays. . . . may serve as powerful bactericides. The few reports on clinical trials thus far available contain suggestive evidence that in children's hospitals and operating rooms the use of ultraviolet light reudces the incidence of new infections. Furthermore, several reports indicate that the spread of chickenpox in institutions is inhibited by this means. . . ."

The importance of the problem of controlling the transmission of infections of respiratory origin is pointed out by Dr. Buchbinder in the opening paragraph in his review. He says:

"At this moment, because of the exigencies of the defense situation, a part of our population is being congregated under conditions highly conducive to the spread of respiratory infection. Furthermore, since even in normal times respiratory infections, both major and minor, are probably responsible for the greater part of all illness in every age group, knowledge of the modes of spread of these infections is of unusual importance."

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The
ILLINOIS
Medical Journal

VOL. 81 ✳ NO. 5

May, 1942

In This Issue

The Significance of the Negri Body in the Diagnosis and Epidemiology of Rabies

✦

Official Program

for the Annual Meeting
Illinois State Medical Society
Springfield, May 19, 20, 21, 1942

✦

(See page 27 for Table of Contents)

OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY



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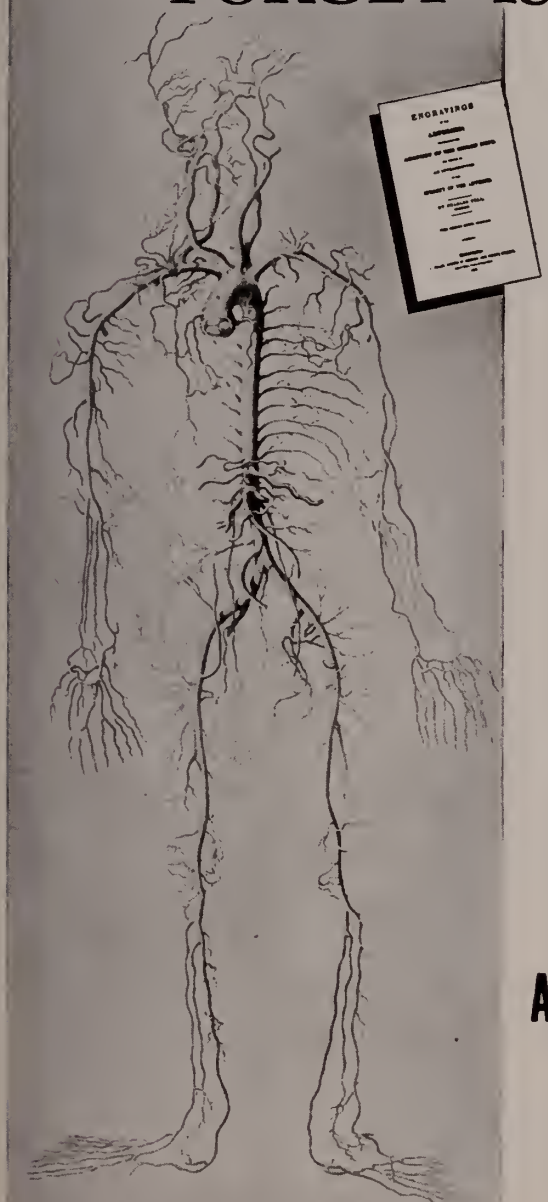
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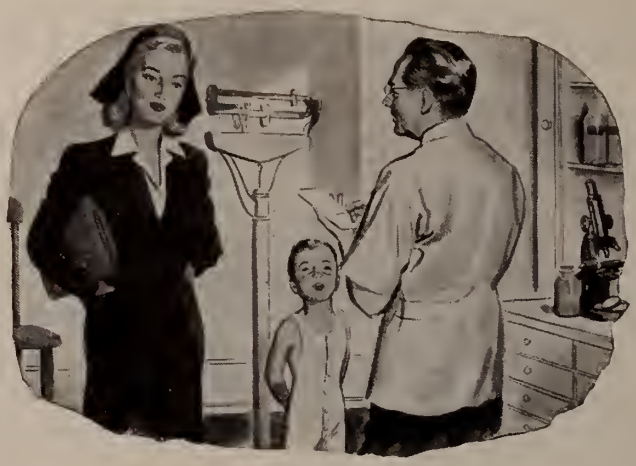
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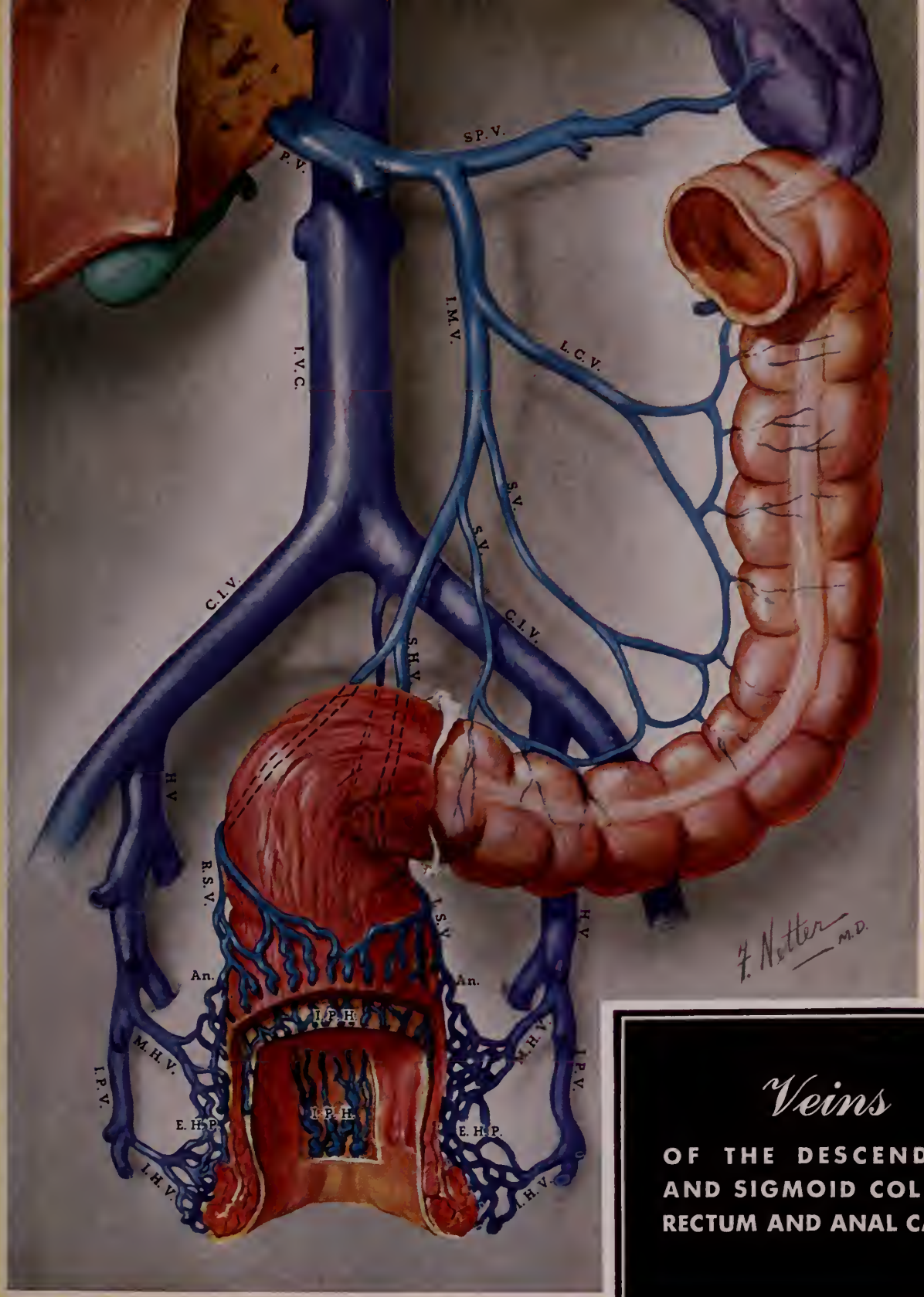
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(1) 1926. U. S. Dept. of Commerce, Bureau of Fisheries, Document No. 1000.
1934. U. S. Pub. Health Reports 49, 754.
1937. U. S. Dept. Agr. Misc. Publ. No. 275.
1938. Food Research 3, 549.
1939. U. S. Dept. of Commerce, Bureau of Fisheries Investigational Report No. 41.

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†Fowler and Barer: "Rate of Hemoglobin Regeneration in Blood Donors." J.A.M.A., 118:421:1942.

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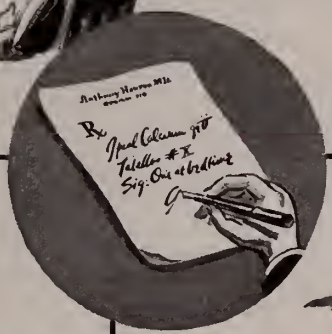
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1. Wilder, R.M.: Ann. Int. Med. 14:2189, June 1941; J. Am. Dietetic Assoc. 18; 1, Jan. 1942.



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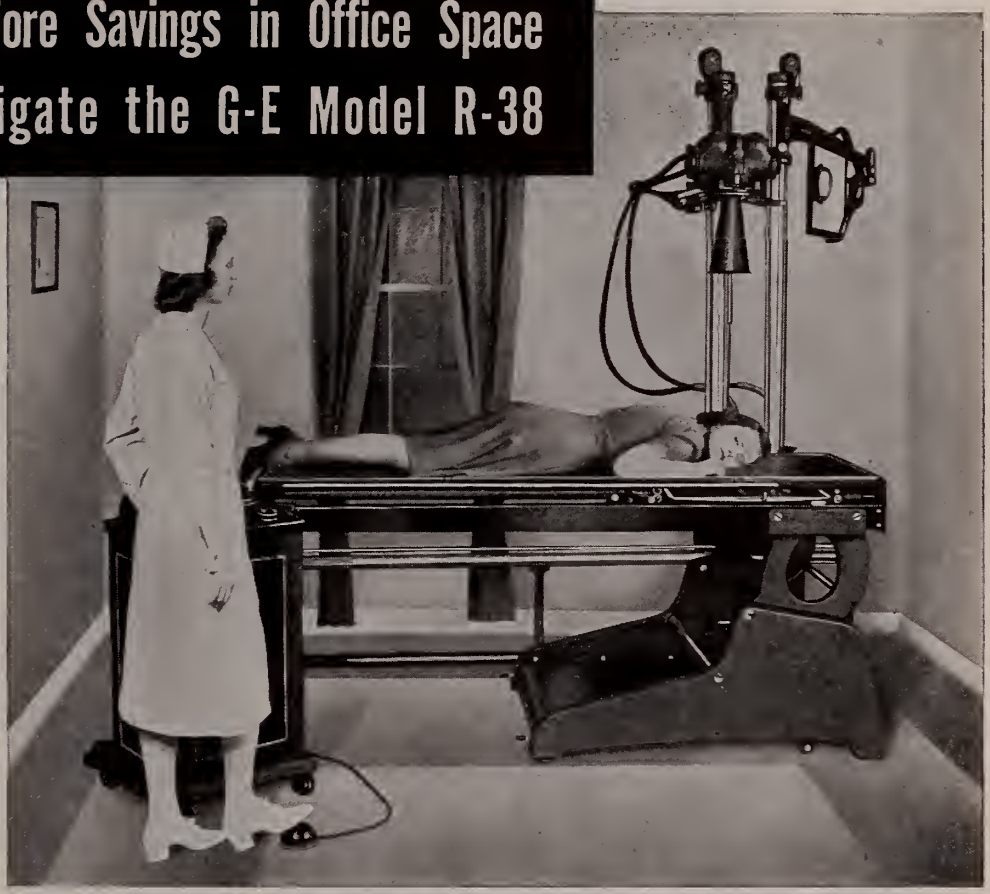
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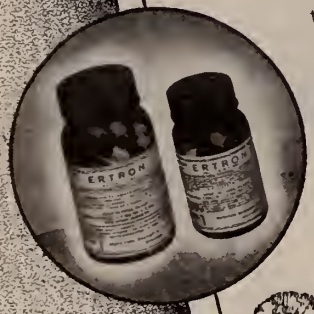
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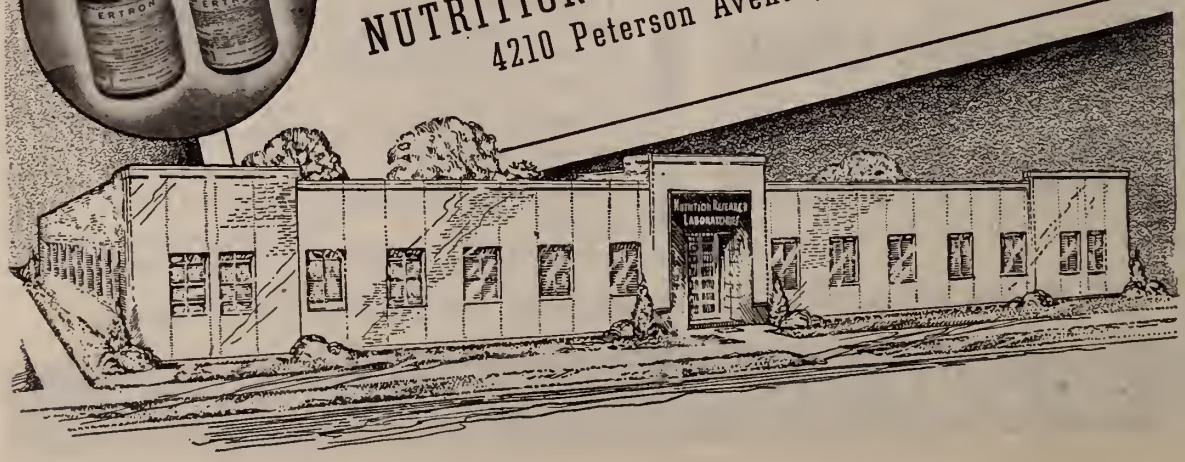
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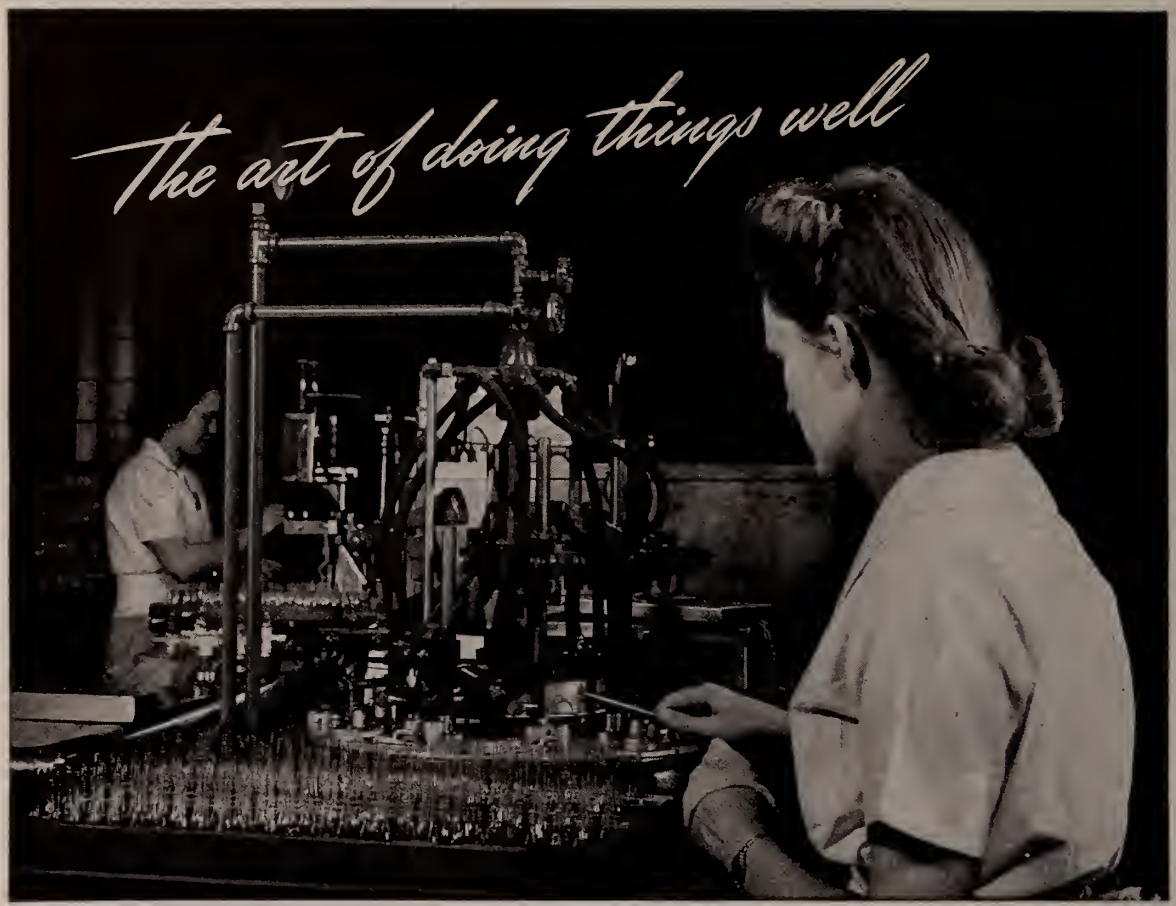
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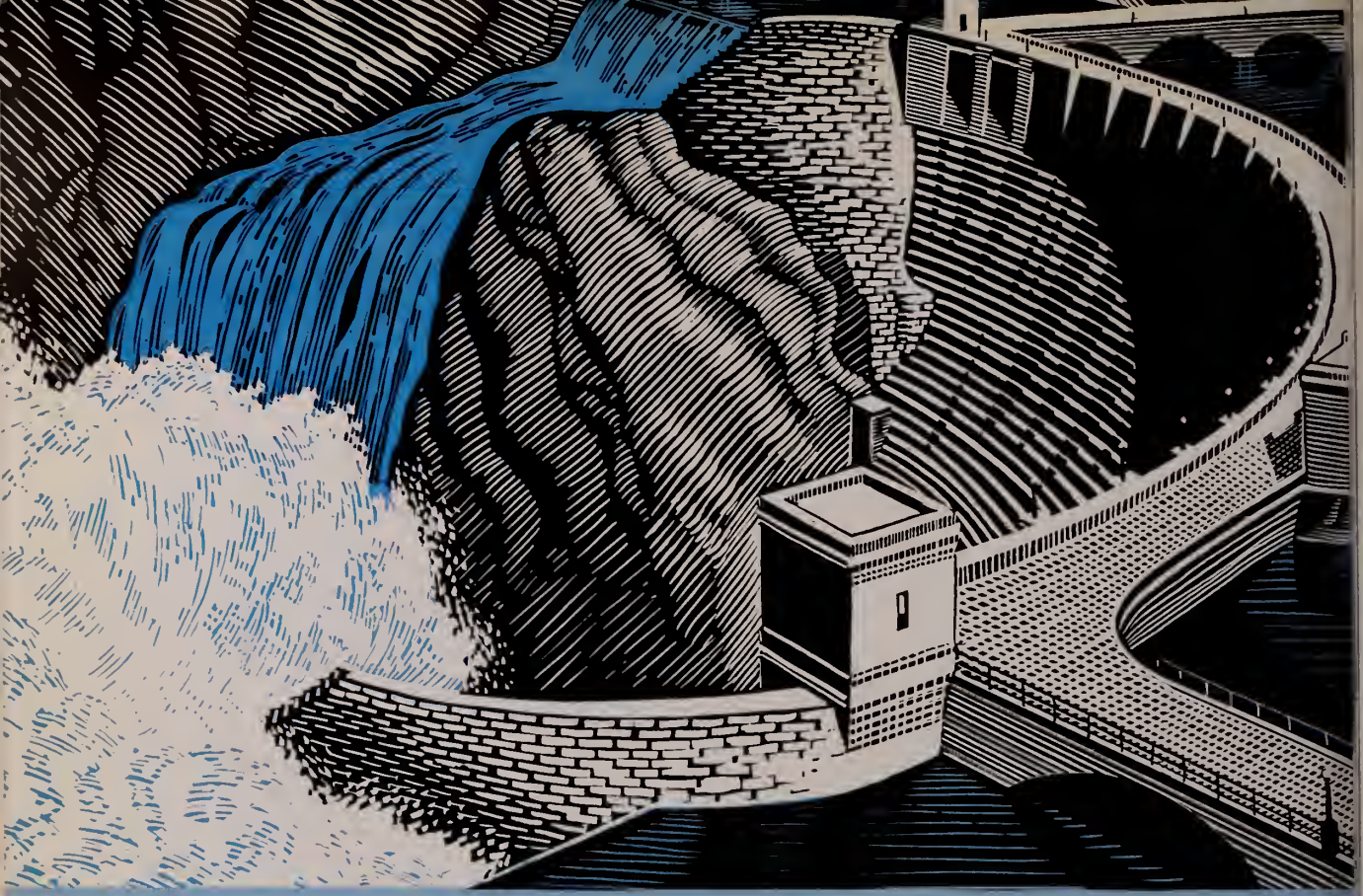
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The Illinois Medical Journal

May, 1942

VOL. 81, NO. 5

Official Journal of the Illinois State Medical Society

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Editorials

THE 1942 ANNUAL MEETING

It has been a quarter of a century since the annual meeting has been held in time of war, and it is most fitting at this 1942 annual meeting that those responsible for preparing the program should schedule talks on subjects pertaining to war medicine.

The Wednesday morning Joint Session under the heading, "Medicine and War," is a most interesting half day for discussions pertaining to Medicine and National Defense. One of the speakers for this symposium presentation is Frank H. Lahey, President of the American Medical Association, and Chairman of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. Those who know Dr. Lahey, or are familiar with his efforts in this emergency, know that he will give a fine talk.

The Secretaries' Conference scheduled for Tuesday Evening, May 19, will have two speakers to discuss the many problems relative to the Procurement and Assignment Service, and the role of the Physician in Civilian Defense. These men represent the respective agencies for the 6th Corps Area, and are familiar with the many problems concerning medicine and medical matters in connection with their work.

The Orations in Medicine and in Surgery will be presented Tuesday Evening, May 19, beginning at 8:30 A. M. Frank H. Lahey, Boston, will deliver the Oration in Surgery, and Cecil J. Watson, Professor of Medicine, University of Minnesota Medical School, Minneapolis, will give the Oration in Medicine. Both subjects are of interest to all physicians, and this Tuesday evening meeting should be attended.

On Wednesday Evening, the annual President's Dinner will be held in the Ball Room of the Abraham Lincoln Hotel, and Governor Dwight H. Green expects to be present to give a short informal talk. Several other distinguished guests are expected to attend this function, and there will be a short program of entertainment during the evening. Our President, Dr. Charles H. Phifer, has devoted the major portion of his time during the past year for the interests of his Society, and more recently as Chairman for the 6th Corps Area for the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, has indeed served both his county and the Illinois State Medical Society. It would indeed be a most fitting tribute to Dr. Phifer, if all who attend the annual meeting are present at the President's Dinner.

The complete program and essential announcements for the annual meeting are published in this issue of the Journal, and it is the hope of all who have assumed responsibility for arranging it that the attendance will be gratifying. The House of Delegates will hold the usual two meetings, the first on Tuesday afternoon at 3:00 o'clock, and the second at 9:00 A. M. Thursday. With our country facing the most

serious crisis in its history, it is quite obvious that many important matters will be presented before the House of Delegates for consideration and necessary action. Every county medical society is entitled to one delegate, while the larger societies have representation according to their membership. Every county medical society should be properly represented in the House of Delegates.

THE COUNTY MEDICAL PREPAREDNESS COMMITTEE

During the Fall of 1940, each county medical society was asked to appoint a Medical Preparedness Committee to aid in the National effort to get all possible data concerning physicians of the United States, so that in the event of war the government would have available this important information.

Questionnaires were sent out by the American Medical Association Committee on Medical Preparedness, these going to every registered physician in the country to get the name, address, age, physical condition, military status and other essential facts concerning them. Likewise the physicians were asked to give information relative to their practice, membership in special societies and other information which would be of value to the government in case of war. This information was transferred to punch cards and the files were maintained for the government only.

The county medical society Committees on Medical Preparedness aided in getting this important information. After the declaration of war on December 8, 1941, against the axis powers, the Procurement and Assignment Service for Physicians, Dentists and Veterinarians asked that these county committees act as the county Committee on Procurement and Assignment. With the executive offices and personnel in Washington, a chairman for each of the Army Corps Areas was named, then with the state Committee, and the county committees, this constituted the Procurement and Assignment Service for Illinois. It seemed desirable to develop a district committee to aid in this work, and with the approval of the Executive Director of Procurement and Assignment the Council of the Illinois State

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Medical Society was asked to act in this capacity.

After the Pearl Harbor assault, the demand for medical officers for the rapidly increasing armed forces became greater each day and it was deemed desirable to create a pool of physicians willing to accept commissions, so that the pool could be used as a means of getting the desired number of physicians for any branch of service with a minimum of delay.

For the first time in the history of our country there is to be concentrated in one office the data on the availability of professional men to supply the needs of the Army, Navy, U. S. Public Health Service, Children's Bureau, Veteran's Administration, U. S. Civil Service, and for other essential government services. No governmental service will commission or employ a physician until he is cleared by the Procurement and Assignment Service.

The need for physicians in the armed forces is greater today than ever before, and it is conservatively estimated that 2,500 physicians will be needed in the Air Corps by July 1st, then 600 per month for the remainder of the current year. The Navy will need a total of 3,000 physicians when its enlistment of a half million men is reached. The Army needs no less than 5,000 physicians within the next two months and not less than 16,000 new physicians by December 31st. For the Air Services, 80% of the physicians must be under 37, while 20% may be selected from the group between 37 and 45, especially if specialists in ophthalmology, traumatic surgery or neuropsychiatry.

When applications are received from physicians, they are referred from Washington to the state committee, then to the individual county committees to get the desired information. All county medical society committees in Illinois have received forms for reporting on each individual physician so that but little time will be lost to get the desired information back to Washington.

One difficult thing to determine is whether or not the physician especially within the present draft age limits, is essential for civilian care, or is available for military service. Greater care should be taken in case of these younger men who are subject to call before the local draft board, and even though they may be deemed essential in the community, the draft board has the authority to make their own decision as to classification.

It seems quite probable that many clinical groups, hospital staffs, as well as some communities will be unable to retain as many physicians as they would desire to keep on hand, but with the large demands for physicians and the fact that most of them are desired within the draft age limits, it will be necessary for older men to care for more patients "for the duration." One report received recently from a county committee stated that there are 15 physicians in the county, and if a minimum of five of the older men are left at home, they will be able to care for the civilian population even through they must work longer hours, and eliminate the usual vacation periods.

Some hospitals have reported that physicians under 35 are "absolutely essential for teaching purposes," but is seems possible at least for the "duration," to let older physicians do the teaching, and make the younger men available.

It is quite obvious that the medical profession is best fitted to determine the minimum requirements, and state who are absolutely essential and those deemed available, even though it may be a hardship on some within the community if a popular young physician is called into the service of his country. As it has been so frequently stated in recent months, a physician who is busy and popular in civilian practice should likewise become popular in the Army or Navy and is the type most desired at the present time.

We are indeed facing at this time the greatest crisis in the history of this country and it is going to require the all out effort on the part of all citizens to end this war. The medical profession has had an important part in all wars since the Revolutionary War, and invariably its members have done those duties which have been assigned to them. It seems unlikely that a program for conscription of physicians will become necessary, and that every physician will continue to be willing to do his or her part for the final victory.

With the changing conditions since the formation of the county committees on medical preparedness, they will in the future be referred to as "County Committees on Procurement and As-

signment." The Illinois Medical Journal in its new department on "Medicine and National Defense" will endeavor to give the latest releases which have been received during the month, and in addition, the county Committees on Procurement and Assignment will receive informative bulletins from the State Committee at relatively frequent intervals.

CIVILIAN PHYSICAL FITNESS

A program combining attention to remediable defects that reduce efficiency with a program of conditioning excercises and sports adapted to age, sex and physical condition is in preparation with a special class of ninety-six professional physical educators, directed by a faculty of nine representing all Chicago schools that train physical educators and with the cooperation of a committee of the council of this society.

The first step in the program is a physical examination by the civilians' family physician. As the program is inaugurated in Illinois during the coming months, many civilians may present themselves for this Civilian Physical Fitness Physical Examination. They will bring a specially devised Report Blank on which the physician is to report recommendations relating to the civilian's ability to undergo restricted or unrestricted physical training. On the reverse side of the blank a list of activities classified as strenuous, moderate and mild are ready to be checked in the light of the physician's findings.

Conditions indicated as needing attention must be corrected before the civilian is recommended for the designation that he has advanced himself in the Physical Fitness program.

The Committee believes that this program is in capable hands; that it is a constructive move in health and physical education; and that it is deserving of your support and encouragement.

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To the Physician:

To condition civilians better to withstand the physical demands of the emergency, there is being conducted under especially trained leadership a graduated program of exercise and physical fitness tests.

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(1st) Correct any remediable defects that may impair his effectiveness.

(2nd) Undergo a training program and pass a number of physical performance tests adapted to his age and sex.

To disclose his remediable defects and to advise the extent to which he may undergo physical training, he needs a physician's report directed to his Civilian Fitness Leader.

This program is now in its inception. The accompanying Report Blank is still in an experimental stage. It is an attempt to pick out minimal essentials for a special purpose. You are not asked to conduct this examination without charge. The cost must be borne by the civilian who presents himself to you. We will appreciate your sympathetic cooperation in this endeavor to make America fit.

Endorsed by the Illinois State Medical Society in cooperation with the Division of Physical Fitness, 6th Corps Area.

DIGITALIS IN TREATMENT OF OBESITY

(Israel Bram, Philadelphia, in *Med. Rec.*, May, 7th)

The chief difficulty in any weight reduction plan is the patient's abnormal capacity to eat, which amounts to habit, urgent hunger pains, or both. Last year we reported a series of 140 cases of alimentary obesity treated with the aid of digitalis. A second series of 60 cases of mixed etiology similarly treated is here reported.

The value of digitalis as an appetite-obtunding measure is confirmed. With its aid in a regimen including a reduction dietary and practical psychotherapy, results were highly gratifying. Before administering digitalis, the patient must be properly examined with a view to the detection of contraindications, and must remain under the doctor's observation and control until formally discharged.

Contrary to a popular belief, cheese is not really hard to digest for normal persons, Doris McCray, Cedar Rapids, Iowa, points out in a recent issue of *Hygeia, The Health Magazine.* "But," she qualifies, "it should never be added, as a superfluous item, to an already complete meal. Cheese should be served with bread, toast or crackers, or other cereal food, and with fruit and vegetables, as is the common practice. . . . To serve cheese with pie at the end of a heavy meal that included meat obviously would be superfluous."

Correspondence

A STATEMENT FROM THE COUNCIL REGARDING OBJECTIONS TO THE PLAN FOR MEDICAL CARE IN THE OLD AGE ASSISTANCE AND AID TO DEPENDENT CHILDREN PROGRAMS

Our Committee has worked out with the Division of Public Assistance the best medical program that could be arranged under the circumstances. While most county societies seem to have accepted this plan in the spirit in which it was offered, that is, as the lesser of two evils, other county societies have raised five objections to it:

1. That the program is being jammed down the throats of the medical profession without due notice.

2. That payment is made to the recipient and not to the doctor whose fee is not even guaranteed.

3. The fee schedule, particularly the mileage part of it.

4. The forms to be filled out in reporting these cases.

5. That recipients of grants for medical care spend the money for other things and either do not obtain medical care or do not pay for it.

The following information is presented to clarify the situation:

1. In the President-Elect's Address 1941 Dr. Phifer said: "In discussing the question of compensation for medical service rendered these clients we should remember that they are classed as indigent . . . that the remuneration for medical service should be considered from this standpoint rather than from that of the value of the service rendered."

The House of Delegates 1941 authorized the creation of a committee to be known as the Advisory Committee on Medical Care of Public Assistance Recipients. In accordance with this action the Council appointed such a committee.

The Journal of August 1941 carried an address given by Dr. Phifer before the Secretaries' Conference of that year, in which he pointed out that the federal law forbade direct payments to professional practitioners. He stated also that the Social Security Board was said to be planning amendments to Title I of the Social Security Act which would permit direct payments for medical service. In the meantime the Department of Public Welfare was cooperating with the medical profession by sending to the recipient a notice that the extra grant of money for that month was for the purpose of paying his physician.

The October 1941 Journal carried an editorial in regard to Aid to Dependent Children.

The Journal of February 1942 carried another article entitled "The Medical Care of Public Assistance Recipients."

The Secretary's office from time to time has sent out to all county medical societies and to all county advisory committees notices regarding the progress of this program so that every member of the society should have been reasonably well informed as to the progress of the plan for medical care and its nature.

2. As has been pointed out a number of times, The Social Security Act specifically forbids the payment of money to any one except the recipient or his guardian. To remedy this situation, either one of two things might be done.

a. An amendment to the Social Security Law permitting this payment. We understand that

such an amendment is favored by the Social Security Board.

b. The enactment of a state law which would set up a separate fund out of which doctors could be paid direct.

3. The schedule of fees was arrived at after all county societies had been asked to express themselves regarding it. The schedule finally submitted was an average of the various figures mentioned by the county societies so that the doctors themselves have arranged this fee schedule. The Division of Public Assistance has agreed that where an unusual amount of care is rendered or where a surgical case becomes complicated as in the prolonged care of a fractured hip, the fee can be adjusted by referring it to the county advisory committee or to the state advisory committee. Either of these will attempt to see that the doctor is more adequately remunerated.

4. It is possible that the Division of Public Assistance may be able later to change these forms and make them less irksome.

5. No recipient of Old Age Assistance can receive a grant for medical care unless a doctor certifies that he needs this additional money. If he does not spend it for medical care, the doctor can report the matter to the Division and the grant will be taken away. Through the use of the forms to which objections have been raised, the County Welfare Department can maintain an accurate check on actual payments for medical care and the amounts which have been allocated for it.

The Pauper Act has been changed so that the township supervisor is now responsible only where the cost of medical care becomes excessive, as in a prolonged illness, for hospitalization and for the expenses of the last illness.

Our Committee has devoted a great deal of time to this matter. It has held many meetings with the Division of Public Assistance. The plan submitted was the best that could be devised under the circumstances. However, no one is compelled to accept it.

Some men fail to differentiate between this plan and the practice of the Relief Administration which made payments direct to the doctor. Relief was designed as a temporary measure. The Old Age Assistance and Aid to Dependent Children programs are permanent and the law governing them differs from that covering relief.

There are now nearly 200,000 persons on these two programs and the number will undoubtedly increase. In 1941 $5,500,000 was allocated for medical care to these two groups.

There are few items in these programs that please every one concerned — the recipients, the administrative personnel and the doctors. It is our opinion that the interests of all concerned will be better served if we keep contact with and influence such programs. The old slogan "join 'em and lead 'em" still seems best.

THE COUNCIL

THE CHICAGO CANCER COMMITTEE

Mobilization of forces for the war gainst cancer in the Chicago metropolitan area, begun on April 17 a year ago, has progressed to a stage in which plans have been matured with the agreement of all the participating agencies, and work on several projects has been started.

The time is unfavorable to finance any extensive activity not directly related to the war effort. However, there can be no question but that more can be accomplished by central, coordinated effort, than by separate and often overlapping attempts by several groups to meet the many problems connected with cancer research, diagnosis, treatment, and public education. Cancer is not retreating while we are engaged in military warfare, and a lessening of effort against it now will enlarge the work to be done after the military victory is won, besides permitting many deaths and considerable suffering that should be prevented, in the interim. With more competition for workers and for funds than ever before, this is actually an auspicious time to proceed with an activity that will more effectively concentrate effort against cancer.

The initial meeting to amalgamate work on cancer was called by the cancer committee of the City Club of Chicago on April 17, 1941. Twenty-five organizations were represented by one or more members. The chairman of the meeting was Dr. Ludvig Hektoen, executive director of the National Advisory Cancer Council. The needs were discussed—cancer clinics for the individual of moderate means, additional

facilities for indigent cases, enlargement of present facilities in hospitals and clinics, facilities for advanced cancer cases, more research and more education of both the profession and the laity. To meet these needs, it was brought out at the meeting, co-ordination of the activities of all groups was imperative. Representatives of the following groups agreed that the organization of a co-ordinating agency was desirable if it could be effected:

American College of Surgeons
American Society for the Control of Cancer
Chicago Dental Society
Chicago Medical Society
Chicago Medical Society—Auxiliary
Chicago Relief Administration
Chicago Woman's Aid
Chicago Woman's Club
City Club of Chicago
Commercial Club of Chicago
Cook County Medical Society
Cook County Public Health Unit
Council of Social Agencies
Glenola Club of Loyola Center
Illinois Masonic Hospital
Illinois State Department of Public Health
Illinois State Medical Society
Illinois State Nurses Association
Illinois Division, Women's Field Army
Institute of Medicine of Chicago
Junior League of Chicago
Tuberculosis Institute of Chicago
Visiting Nurses Association
Wabash Y. M. C. A.
Woman's City Club

A motion was passed that the chairman appoint a committee to consider the organization of a Chicago district cancer council. From the recommendations of this committee developed the formal organization of the Chicago Cancer Committee. A certificate of incorporation was issued by the Secretary of State of Illinois on October 14, 1941. The first meeting of the committee was held October 28 with election of officers and directors as follows:

Ludvig Hektoen, M. D., Chairman
William F. Peterson, M. D., Treasurer
Alexander Ropchan, Secretary
Bowman C. Crowell, M. D.
Mrs. Arthur I. Edison
John A. Wolfer, M. D.

Dr. Peterson has recently found it necessary to resign from the office of treasurer but remains a director, and Mr. Ropchan is acting as treasurer. Dr. Wolfer is chairman of the cancer committee of the Illinois State Medical Society and is a member of the cancer committee of the State of Illinois.

The bylaws provide that four of the six members of the Board of Directors shall be doctors of medicine, and they state the objects of the organization as follows:

"The objects for which the corporation is organized are to coincide with the objects of the American Society for the Control of Cancer, and in general to promote the work of the American Society and other anticancer agencies in the Chicago metroplitan area, and to collect, collate and disseminate information concerning the symptoms, diagnosis, treatment and prevention of cancer; to investigate the conditions under which cancer is found and to compile statistics in regard thereto; to co-operate with the Women's Field Army and other anticancer agencies; to aid voluntarily, in co-operation with accredited physicians, indigent cancer patients in securing adequate diagnosis and treatment; to assist volutarily in the establishment, development, equipment or maintenance of hospitals, clinics, laboratories, or other facilities for the care of cancer patients; and generally to carry on any other activities which may contribute toward the control of cancer, except the actual treatment of cancer patients or the actual operation of hospitals, clinics, laboratories or other facilities for such treatment."

Four classes of members were established: (a) life members, who, pay a single fee of $250 or more; (b) sustaining members, who pay dues of $25 per annum; (c) contributing members, who pay annual dues of $2; and (d) associate members who are enlistees in the Women's Field Army. All but the latter have voting rights.

Official endorsement of the Chicago Cancer Committee has been given by the following organizations:

American Society for the Control of Cancer
Chicago Medical Society
City Club of Chicago
Chicago Woman's Aid
Council of Social Agencies, Health Division
Institute of Medicine of Chicago
Illinois State Medical Society
Woman's City Club of Chicago

In conveying a letter dated March 11, 1942, the information that the Council of the

Illinois State Medical Society had unanimously approved the activities of the Chicago Cancer Committee, Dr. Harold M. Camp, Secretary, added the following comment:

"The men felt that the work of the Committee to co-ordinate all cancer control activity in the Chicago area was extremely important and that this type of activity was absolutely necessary to avoid serious duplication."

A tentative outline of a program for the Chicago Cancer Committee was adopted at a meeting of the Board of Directors on December 30, 1941, as follows:

1. Compile a list of lay and professional organizations that are now active in work of any kind in the cancer field in the Chicago area
2. Attempt to secure membership in the Chicago Cancer Committee on the part of representatives of each of these organizations, thus facilitating co-ordination and avoiding duplication
3. Establish a headquarters office for
 (a) Securing memberships
 (b) Collecting material to be used in the various activities of the Committee
 (c) Distributing information about cancer
 (d) Distributing aid
 (e) Organizing a speakers' bureau
4. The office should
 (a) Collect already existing material that is suitable for
 1. Lectures
 2. Radio addresses
 3. Press articles
 4. Motion pictures
 5. Posters
 6. Other activities
 (b) Stimulate the production of and publish or have on hand, other necessary material to supplement that already existing
 (c) Compile panel of speakers and carry on correspondence with prospective places for lectures, exhibits, etc
 (d) Establish relations with physicians, nurses, social workers, etc., to learn of needy cancer patients.
 (e) Furnish such aid as authorized by committee
5. The Committee should promote provision for
 (a) Aid to needy cancer cases, including
 1. X-ray and microscopic diagnosis
 2. Medical and hospital care
 3. Transportation of patients to and from clinic or doctor
 4. Medical and nursing care in the home
 5. Nursing homes for terminal cases
 (b) Aid to cancer clinics and hospitals including
 1. Physical equipment
 2. Personnel for social service and secretarial purposes
 (c) Fostering cancer research in already existing institutions

A committee of the Chicago Medical Society has undertaken to compile a directory of cancer facilities in the Chicago metropolitan area. Memberships and contributions are accumulating, with several substantial donations already received or promised. The Chicago Association of Commerce has encouraged the Committee to seek endorsement when a full time secretary has been employed.

A speaker's bureau for lay and professional education is being formed with the co-operation of the Illinois State Medical Society through a committee of which Dr. J. J. Moore is chairman and on which downstate as well as Chicago physicians will serve. The Educational Committee of the Illinois State Medical Society has given the new committee authority to control and arrange the professional cancer control programs for the entire state.

Work on the research phase of the program outlined for the Chicago Cancer Committee has already been started with the appointment of a Committee on Gastric Cancer under the chairmanship of Dr. Walter L. Palmer. The stated object of this committee is to educate physicians in the diagnosis and treatment of gastric cancer and to establish a unit to x-ray annually the stomachs of persons past 40 years of age.

The Committee, feeling a special need for an adequate study of the incidence of cancer in the Negro population, has proposed to persons familiar with the health problems of this group that a survey be conducted under its sponsorship.

Following the ascertaining by the Chicago Medical Society Cancer Committee of the situation in general as regards cancer facilities in the city, the Dispensary Subcommittee of the Chicago Cancer Committee will explore in greater detail, if necessary, existing cancer services and facilities in clinics. This will make it possible to accompany a public educational program with a directing service, when this is requested, to available assistance for indigent patients, as well as for those who can pay all or part of their ex-

penses. This service the committee will as soon as possible supplement with financial assistance to those clinics and hospitals which need it.

Thus practical aid to the cancer patient is the hub of the program for the new Chicago Cancer Committee, and the spokes of the wheel are professional education, public education, research, encouragement and assistance to existing and new clinics, and guidance in obtaining medical advice to the individual who has or fears he may have cancer.

WOMAN'S AUXILIARY NOTES

County News

So many fine reports were given on the activities of the Woman's Auxiliary at the last Board meeting I felt we must share some part of them with others. I'd like to quote a bit from the report of the Chairman of Adams County.

"This auxiliary is now engaged in serving the Red Cross in a most important and interesting project. In January of this year the Chairman of Adams County Chapter Red Cross asked our organization to take charge of the Blood Donor Service in our County. We considered this a great honor and after due consultation with members of our local Advisory Board and Medical Society President, we began preparation for carrying on this work for the Red Cross. We have had enthusiastic co-operation from our local physicians and have on our files between five and six hundred names of volunteer blood donors. One hundred and sixty-two people have already served as donors and have received certification from the St. Louis District Office of American Red Cross. As you probably know, the blood secured through this service is processed into what is termed blood plasma and is sent directly to the Army and Navy base hospitals and hospital ships for use in the care of the wounded in our armed forces.

The women of our auxiliary assist a mobile unit which is sent to Quincy from St. Louis. It is staffed with a Red Cross Physician and six nurses who carry on the procurement of the blood. Our work consists of the following services: Registration and enrollment of donors; actual assistance at the time they are giving blood and a canteen service following in which each donor is given nourishing food and a hot drink before leaving the center.

This work has given new impetus to us all. We realize our country is really at war and efficient and concentrated work is needed."

In such an emergency as our country now faces, what a fine thing it is that women are qualified and organized to help carry on important services to the Red Cross and our country.

National Convention Notice

A few more days, and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Atlantic City, New Jersey, for the Annual Conventon, June 8-12. Have you made your reservations? If not, send your request at once to Haddon Hall, Atlantic City, New Jersey.

Mrs. David B. Allman,
National Convention Chairman

Your president would like the pleasure of seeing you at the State Convention at Springfield, Illinois, May 19-21.

Mrs. Charles W. Stigman,
Press & Publicity Chairman

Mrs. Harry Otten,
President

ANNOUNCE MEDICAL RESEARCH PRIZE

The Institute of Medicine of Chicago offers its annual Joseph A. Capps Prize for medical research of $400 for 1942 for the most meritorious investigation in medicine or in the specialties of medicine. The investigation may also be in the fundamental sciences provided the work has a definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who completed their internship or one year of laboratory work in 1940 or thereafter. Manuscripts must be submitted to the Secretary of the Institute of Medicine of Chicago, 86 East Randolph Street, not later than December 31, 1942.

SEVENTY-FIFTH REUNION

The Medical Division of the Northwestern University Alumni Association will hold its Seventy-fifth Annual Faculty-Alumni Reunion dinner on May 29th at 6:30 p. m., in the Grand Ballroom of the Knickerbocker Hotel.

POSTGRADUATE COURSE IN OBSTETRICS AND PEDIATRICS TO BE REPEATED AT THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The Departments of Obstetrics and Pediatrics of the University of Illinois, cooperating with the staffs of the medical schools of Chicago and the State Department of Public Health, will again offer to physicians of Illinois an intensive one week's course in obstetrics and pediatrics at the Research and Educational Hospitals. The course begins Monday morning at 8:30 o'clock and ends at 4 o'clock Friday evening with the liberty to attend dispensaries of choice or visit other institutions on Saturday. Because of conditions resulting from the war it planned to offer this course for only one week.—June 22, 1942.

Staff members of all Chicago medical colleges are participating in giving the course. Subjects will include: Cesaerian Section, Care of the Premature Infant, The Use of Vitamins in Obstetrics, The Kenny Treatment of Infantile Paralysis, Modern Conception of Abortion, Scarlet Fever, Trichomonas vaginalis vaginitis and Allied Disorders, Upper Respiratory Infections of Children, Dystocia, Rheumatic Fever, Behavior Problems, Neurologic Examination of Children. Faculty members will include such obstetricians and pediatricians as Doctors B. I. Beverly, L. E. Bower, W. H. Browne, D. N. Buchanan, Craig Butler, W. C. Danforth, F. H. Falls, Sanley Gibson, Julius Hess, H. C. Hesseltine, Archibald Hoyne, A. J. Kobak, Frances Lederer, Philip Lewin, Charles Newberger, A. H. Parmelee, H. G. Poncher, and Herbert Schmitz. Opportunity is given for individual consultation with many of these men.

The registration fee of $10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois. Because registration is limited it will be necessary for interested physicians to indicate their intention of attending as early as possible.

Convenient living accomodations can be obtained at the nearby students' Y. M. C. A. at reasonable rates.

APPLICATION BLANK

Name Age
Date of Graduation
Street Address
City
Member of County Medical Society? Yes .. No ..
Do you wish a room reserved for you at the Y. M. C. A.
Fee $10.00—Make checks payable to University of Illinois College of Medicine.
Mail applications to G. R. Moon, Registrar, 1853 West Polk Street, Chicago, Illinois.

IOWA-ILLINOIS ANNUAL MEETING

The annual meeting of the Iowa and Illinois Central District Medical Association will be held Thursday May 14, 1942, at the Outing Club in Davenport, Iowa. The scientific program will be held in the afternoon, when Dr. J. W. McCall of Cleveland, Ohio, will present "Laryngectomy and The Esophogeal Voice" illustrated with kodochrome films, both still and motion pictures; also the demonstration of a patient, and Dr. Willard O. Thompson of Chicago will speak on "Recent Advances in Endocrinology." Dr. Thompson is Associate Professor of Medicine at the University of Illinois School of Medicine.

At 6 P.M. Dinner will be served.

At 7:30 P.M. Election of officers.

At 7:45 P. M. The fifty year gold button of the association will be presented to Drs. Karl Vollmer of Davenport, Iowa, W. L. Eddy of Milan, Illinois, and W. F. Meyers of Coal Valley, Illinois.

At 8:00 P.M. Dr. Claire LeRoy Straith of Detroit, Michigan will speak on "Plastic Surgery." Dr. Straith is Chief of the Division of Plastic Surgery at the Harper Hospital in Detroit.

ILLINOIS DIPLOMATES WILL MEET

Annual get-to-gether of the Illinois Diplomates of the National Board of Medical Examiners, Hotel Abraham Lincoln, Springfield, Wednesday, May 20th at 5:00 P. M. Mr. E. S. Elwood, Executive Secretary of the Board will give a brief talk. Following the meeting there will be an informal gathering of the Diplomates before the President's Dinner.

For information address W. O. Thompson, 700 North Michigan Avenue, Chicago.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

The end of the society year approaches and we take stock of our accomplishments. As ever, in medicine it has been one of progress. We share this record of progress as individuals, and yet all of us realize that it is the result of organization and cooperation. It is really the one thing that has been planned that way.

The Committee on Medical Economics has been content for the past few years to study various plans for increasing the distribution of medical care, and the committee has been in sympathy with such experiments and appreciates the fact that all real progress is the result of some original experimentation. There has been nothing to change our minds in the belief that any form of socialization of medicine would improve medical care as a whole in this country. We do not believe that health can be legislated any more than we believe that morals, sobriety or education can be the direct result of legislation. Intelligence cannot be legislated. We believe that education is the answer to some of our problems, and while this at times seems slow we must not allow that seeming slowness to make us branch out into too many untried paths at one time.

We believe that the high standard of ethics and honesty is essential and that this high standard of ethics and honesty must prevail among all of the branches of our social unit as well as among individuals themselves. We are making real progress in the war, and many of the problems of business, labor and politics are being quite satisfactorily settled. However, unless we can develop a higher standard of ethics and honesty among individuals and among nations themselves, we shall have gained very little as the result of this war.

Ever increasing legislation in a democracy is the sure sign that that democracy is failing for a large number of laws is the result of some form of unethical or dishonest practice. We appreciate the fact that certain legislation is necessary, and that all people cannot be created or legislated into ethical and honest individuals, but certainly our goal of education should be towards such a state. Most of us know what is wrong and what is right. When we do right it is because we have a code of ethics stronger than our selfish desire; when we do wrong it is because our selfish interest pushed aside our code of ethics, and when that happens we cease to be true representatives of a democracy. We widen the ring of individuals who eventually destroy democracy.

The report of the Committee on Medical Economics, which will be published for the annual meeting, covers a careful discussion of group hospitalization, prepayment medical plans and comments on the compulsory hospitalization under a proposed amendment to the Social Security Act. The committee hopes that everyone will read this report and the recommendations contained therein.

Dr. R. K. Packard, Chairman Committee on Medical Economics.

Keep the Star of Hope and Freedom Shining in America

Buy U. S. Defense Bonds and Stamps

Medicine and National Defense

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

Information from Major Sam F. Seeley, Executive Officer of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, 601 Pennsylvania Avenue, Washington, D. C., states that a request has just been received by that office from the Army Air Force for two thousand five hundred physicians to be commissioned by July 1 and for six hundred physicians to be commissioned each month thereafter for the period of 1942. The total is six thousand one hundred physicians needed this year to provide adequate medical care for the Air Force. The place of the Air Force in the winning of the war is already apparent to every one.

QUALIFICATIONS

Eighty per cent of the physicians to be commissioned must be under 37 years of age. The remaining 20 per cent may be between the ages of 37 and 45 years. Those in the older age group must be qualified by certification as specialists preferably in the field of surgery, ophthalmology and neuropsychiatry.

The letter of application should state the age of the applicant and the school of graduation and should indicate that he believes himself qualified physically and professionally for a commission.

All names are cleared through the Procurement and Assignment Service.

The letter, requesting application forms, should be sent to the Air Surgeon, Army Air Force, Washington, D. C.

COMMISSIONING OF CIVILIAN DOCTORS

Recently The Surgeon General has authorized Corps Area Surgeons to encourage commissioning of civilian doctors in the Medical Corps, Army of the United States.

Since there are a number of vacancies at present in this Corps Area and the need for doctors elsewhere correspondingly greater, it is essential that we obtain a large number of physicians by this method.

All applications for appointment should be addressed to

Lieutenant Colonel R. F. Olmsted, Medical Corps,
Office of the Surgeon, Room 912,
New Post Office Building,
Chicago, Illinois.

for appropriate action. As soon as the applications are completed they will be sent to The Surgeon General who will clear them through the Procurement and Assignment Service.

★ ★

WAIVER OF PHYSICAL DEFECTS FOR LIMITED SERVICE OFFICERS

On January 30 the following communication was sent to surgeons in all corps areas and departments except the Philippine Department and to the commanding officers of all general hospitals except Sternberg General Hospital in Manila.

1. In order that the provisions of AG 210.31 (12-19-41) RP-A, Jan. 7, 1942, subject: Waiving of physical defects for limited service officers of the supply arms and services may be carried out in a uniform manner, the following

policies of this office concerning recmmendations for waiver for limited service are announced:

(a) Considered acceptable for limited service:

(1) Overweight to 25 per cent above average weight for age and height, and underweight to 15 per cent below ideal weight, provided chest x-ray examination is negative for pulmonary pathologic change and other chronic disease is carefully excluded.

(2) Vision 20/400 in each eye corrected with glasses in possession of the examinee to 20/20 in one eye and to at least 20/40 in the other, provided no organic disease of either eye exists.

(3) Blindness, or vision below 20/400, in one eye with vision 20/100 corrected with glasses in possession of the examinee to 20/20 in the other, provided there is no organic disease in the better eye and no history of cataract or other disease in the more defective eye which might be expected to involve the better one, and provided that, in case of ophthalmosteresis, the individual is fitted with a satisfactory prosthesis.

(4) Complete color blindness.

(5) Hearing 5/20 in each ear for low conversational voice, or complete deafness in one ear with hearing 10/20 or better in the other, provided the defect is not due to active inflammatory disease and is stationary in character.

(6) Chronic otitis media, inactive, with perforation of membrana tympani, provided there is a trustworthy history of freedom from activity for the preceding five years.

(7) Old fracture of the spine or pelvic bones which has healed without marked deformity, provided there is a trustworthy history of freedom from symptoms during the preceding two years.

(8) Loss of one hand, forearm, or lower extremity below junction of the middle and lower thirds of the thigh, provided the lost member is replaced with a satisfactory prosthesis.

(9) Pes planus, pes cavus or talipes equinus, provided the condition is asymptomatic and does not interfere with normal locomotion.

(10) History of osteomyelitis following fracture, provided x-ray examination indicates complete healing and the condition has been asymptomatic for the preceding five years.

(11) Joints fixed or limited in motion, provided the condition is the result of injury and is nonsymptomatic.

(12) History of excision of torn or detached semilunar cartilage of knee joint, provided there is normal stability of the joint and a period of one year with complete freedom from symptoms has elapsed since the operation.

(13) Residuals of anterior poliomyelitis, without marked deformity or loss of function, orginating two years or more prior to examination.

(14) Varicose veins, moderate, without edema or discoloration of skin.

(15) History of gastric or duodenal ulcer, provided there is a trustworthy history of freedom from activity during the preceding five years and provided a gastrointestinal roentgenogram at the time of examination is negative.

(16) Incomplete inguinal hernia.

(17) Small asymptomatic congenital umbilical hernia.

(18) Absence of one kidney, provided its removal has been necessitated by other than tuberculosis or malignancy and the other kidney is normal.

(b) Consider unacceptable for any service:

(1) History of malignant disease within preceding five years.

(2) Active tuberculosis of any organ and inactive pulmonary tuberculosis except as described in paragraph 2*a*.

(3) Syphilis, except adequately treated syphilis as described in paragraph 2*b*.

(4) Old fracture of the skull with bony defect greater than 2 cm. in longest diameter or with history of accompanying mental or neurologic complications.

(5) Instability of any of the major joints.

(6) History of metastatic osteomyelitis with prolonged or recurrent drainage, regardless of duration.

(7) Arthritis of the atrophic (rheumatoid) type.

(8) Any cardiovascular condition which disqualifies for general military service.

(9) History of gastroenterostomy, gastric resection, intestinal anastomosis or operation for intestinal obstruction.

(10) History of prostatectomy or transurethral resection of the prostate, or of prostatic hypertrophy of any degree.

(11) Chronic endocrine disease except mild

hypothyriodism or mild Froehlich's syndrome.

(12) Diabetes mellitus of any degree or renal glycosuria.

(13) History of any psychosis.

(14) History of severe psychoneurosis at any time, or psychoneurosis of any degree if it has been recurrent or has shown symptoms within the preceding five years.

2. The following may be recommended for general military service with waiver:

(a) Individuals with minimal inactive lesions of primary or reinfection type pulmonary tuberculosis. These lesions may consist of:

(1) Calcified residues of lesions of the intrathoracic lymph nodes, provided none of these exceed an arbitrary limit of 1.5 cm. in diameter and the total number does not exceed five.

(2) Calcified lesions of the pulmonary parenchyma, provided the total number does not exceed ten, one of which may equal but not exceed 1 cm. in diameter, but none of the remainder may exceed 0.5 cm. in diameter.

(NOTE.—The lesions described in (1) and (2) should appear sharply circumscribed, homogeneous and dense. Measurements refer to standard 14 by 17 inch direct projection roentgenograms.)

(3) Small fibrotic parenchymal lesions represented in the roentgenogram as sharply demarcated strandlike or well defined small nodular shadows not exceeding a total area of 5 sq. cm., provided acceptance is deferred until subsequent examination demonstrates that the lesions are stationary and are not likely to be reactivated. The minimum period of time to determine this is six months. It must be recognized that either progression or regression of the lesions indicates activity.

(b) Individuals with confirmed positive serologic tests for syphilis with no clinical evidence of the disease, with convincing histories of a trustworthy diagnosis of syphilis, or with reliable histories of treatment for the disease on serologic or clinical grounds; provided:

(1) That a negative spinal fluid since infection and treatment has been reported from a trustworthy source;

(2) That, in infections estimated to be of less than four years' duration, at least thirty to forty arsenical and forty to sixty insoluble bismuth injections or their equivalent, with a minimum total of seventy-five injections, have been given, with approximate continuity (no rest periods or lapses) during the first thirty weeks of treatment; and

(3) That, except as further qualified, in infections estimated to be over four years' duration, at least twenty arsenical injections and forty to sixty insoluble bismuth injections or their equivalent, with a minimum total of sixty injections, have been given in alternating courses; rest periods between consecutive courses not exceeding eight weeks being allowable.

In infections of unknown duration it shall be presumed for classification purposes that those of individuals under 26 years of age are of less than four years' duration, and over 26 years, of more than four years' duration.

(NOTE.—For the determination of treatment, the signed statement of acceptable treatment sources administering it, with total number of doses of each drug and approximate calendar dates of administration and available laboratory and clinical data, shall be required as evidence.)

(c) Overweight to 20 per cent above average weight for age and height, and underweight to 12.5 per cent below ideal weight, provded a chest roentgenogram is negative for pulmonary pathologic changes and other chronic disease is carefully excluded.

(d) Insufficient incisor or masticating teeth, provided the mouth is free from extensive infectious processes and the examinee is wearing satisfactory dentures.

(e) Pilonidal cyst or sinus, provided there is no palpable tumor mass, no evidence of purulent or serous discharge, and no history of previous discharge or inflammation.

(f) History of healed fracture with bone plates, screws or wires used for fixation of fragments still in situ, provided x-ray examination shows no evidence of osteomyelitis and no rarefaction of bone contiguous to the fixative materials; that such fixative materials are not so located that they will be subjected to pressure from military clothing or equipment, and that one year has elapsed since their application.

(g) History of operation or of injection treatment for inguinal or small ventral hernia, provided examination three months or more following operation, or following the last injection, shows a satisfactory result.

(h) History of unilateral renal calculus, pro-

vided the condition has been asymptomatic for the preceding three years, urine examination is negative, and roentgenologic examination (flat plate) of both kidneys is negative.

(i) Absence of the spleen, provided its removal has been necessitated by a crushing injury.

(j) History of cholecystectomy, provided the condition has been asymptomatic for the preceding two years.

(3) The action of the reviewing medical authority should indicate on the Report of Physical Examination, W. D., A. G. O. Form No. 63, that cognizance has been taken of any defects which do not meet the standards set forth in AR 40-105, but for which waiver is recommended by a notation as follows:

"Recommend acceptance for general military service with waiver of (here record the defect or defects)," or

"Recommend acceptance for limited service only with waiver of (here record the defect or defects)."

By order of the Surgeon General:

John A. Rogers, Lieutenant Colonel,
Medical Corps, Executive Officer

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METHOD OF PROCUREMENT OF MEDICAL OFFICERS FOR THE U. S. NAVAL RESERVE

Rear Admiral Ross T. McIntire, surgeon general of the Navy, has submitted the following information:

Recruitment of medical officers for the U. S. Naval Reserve has been transferred from the office of the commandants of the naval districts to the directors of naval officer procurement, located in the cities listed. A physician desiring to apply for appointment in the Medical Corps of the Naval Reserve should communicate directly with the director of naval officer procurement in the location nearest his place of residence. A communication addressed to the director should contain full information regarding date of birth, medical school from which graduated, and professional attainments since graduation. In this communication the prospective applicant should request a circular of information for persons desiring appointment in the U. S. Naval Reserve, and application forms for such appointment.

The Procurement and Assignment Service does not act as a recruiting agency for the U. S. Navy. Applications for appointment in the Medical Corps of the U. S. Naval Reserve are cleared through the Procurement and Assignment Service by the directors of naval officer procurement. The only purpose of clearing through this service is to determine which applicants hold civilian positions essential to national defense, to another governmental agency, and those considered essential on teaching faculties of accredited medical and dental schools. Such individuals will not be offered commissions in the U. S. Naval Reserve.

If physicians fill out the new questionnaire blanks which are soon to be distributed by the Procurement and Assignment Service and indicate that they desire to apply for appointment in the U. S. Naval Reserve, their names will be submitted to the Bureau of Medicine and Surgery, which in turn will communicate with these physicians.

OFFICES OF NAVAL OFFICER PROCUREMENT

First Naval District, 150 Causeway Street, Boston.

Third Naval District, 33 Pine Street, New York.

Fourth Naval District, seventeenth floor, Widener Building, Philadelphia.

Fifth Naval District, Chevrolet Parts Building, Norfolk and Altamont Streets, Richmond, Va.

Sixth Naval District, The Center, Marion Square, Charleston, S. C.

Seventh Naval District, Langford Building, 121 S. E. First Street, Miami, Fla.

Eighth Naval District, Louisiana Building, 217-227 Camp Street, New Orleans.

Ninth Naval District, Board of Trade Building, 141 West Jackson Boulevard, Chicago.

Eleventh Naval District, 850 Lilac Terrace, Los Angeles.

Twelfth Naval District, Federal Office Building, Civic Center, San Francisco.

Thirteenth Naval District, 117 Marion Street, Seattle, Washington, D. C., 1320 G Street N. W.

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OFFICE OF CIVILIAN DEFENSE WILL AID ESTABLISHMENT OF BLOOD AND PLASMA BANKS

Hospitals in communities which are exposed to war hazards may receive assistance in the establishment of a blood and plasma bank through funds available to the United States Public Health Service. These will be administered by it through the Medical Division of the United

States Office of Civilian Defense. In addition to providing whole blood or liquid plasma for the current needs of hospitals, these blood banks as well as others already in operation are to accumulate a reserve supply of plasma for civilian casualties caused by enemy action. Technical and bacteriologic safeguards are to be observed as recommended by the Subcommittee on Blood Substitutes of the Division of Medical Sciences of the National Research Council. At the request of the Office of Civilian Defense, a technical handbook on blood and plasma banks has been prepared by this committee, which will be distributed by the Office of Civilian Defense to hospitals.

Following the advice of the committee of the National Research Council, financial and technical assistance will be provided only to three hundred hospitals of two hundred or more beds approved by the American College of Surgeons and the Hospital Register of the American Medical Association. These hospitals will agree to maintain required technical standards and to accumulate a surplus of liquid or frozen plasma amounting to one unit per bed within three months. Grants will be made only for the purchase of essential equipment if obtainable locally and for sufficient technical assistance to initiate the project. Hospitals will thereafter be expected to continue to maintain the blood and plasma bank to meet their daily needs as well as the plasma reserve for civilian casualties.

Technical guidance has also been made available through the appointment of Dr. John B. Alsever of Syracuse, N. Y., by the Surgeon General of the U. S. Public Health Service, and his assignment to the medical division of the Office of Civilian Defense as technical director of its blood and plasma service. Dr. Alsever will be assisted by regional technical consultants in various parts of the country, whose consulting services will be made available to hospitals in their area.

As a further safeguard for the civilian population, the United States Public Health Service is providing for the production of 50,000 units of dried plasma or human albumin in laboratories approved for the manufacture of biologic products by the National Institute of Health. The American Red Cross has agreed to collect the blood for this purpose without interference with its blood collecting services for the armed forces. This second reserve of dried plasma will be distributed to Office of Civilian Defense depots located in various parts of the country. It will be made available by the medical division of the Office of Civilian Defense to stricken communities for their casualties whenever their own local stores of liquid or frozen plasma are in danger of being depleted.

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FUNCTION OF MEDICAL ADVISORY BOARDS (VI)

Memorandum (1-403) Concerning Relationships of Medical Examinations by Induction and Advisory Boards

It has been brought to the attention of this headquarters that in some of the corps areas registrants are being referred back to local boards and medical advisory boards by the examining and induction stations for additional examinations, including laboratory and x-ray tests, to determine their physical qualifications for induction.

The Medical Advisory Board is an element of the Selective Service System. There is no objection to the use by the Army of the specialists on such boards provided the cost is borne by the Army and it is distinctly understood that such services are rendered to and for the Army. In no event should a registrant be referred back to local boards for an additional examination prior to a final action by the examining and induction stations.

A problem arises, not infrequently, at the examining and induction stations, where the registrant declares that he suffers from epilepsy, asthma or other conditions and yet presents no proof other than his bare statement. Because of lack of acquaintance with the registrant, the examiner naturally is uncertain as to the truth or falsity of the statement. If such cases are rejected and returned to the local board, a statement will be made by the examining and induction stations under remarks on the "Report of Physical Examination and Induction" (form 221), giving the basis for the cause of rejection. If the local board or its examing physician has reason to believe that the registrant has falsified such a statement, it may accumulate evidence to justify its belief and return the registrant at

a subsequent date, accompanied by such evidence.

Lewis B. Hershey, Director,
Selective Service System.

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CIVIL SERVICE COMMISSION RECOMMENDS ENROLMENT

In the past, the U. S. Civil Service Commission, in furnishing to federal agencies the names of physicians, dentists and veterinarians who had qualified in civil service examinations, has found that the making of appointments has been retarded by an excessive proportion of declinations from those eligible when appointment was offered. Persons who were available for federal medical positions when the examination was held were no longer available for such appointment when their names were reached on the commission's register of the eligible.

The present war emergency demands promptness in filling vacancies in various governmental agencies, and the determination of immediate availability of applicants for civil service employment early in the examining process has become of increasing importance. The U. S. Civil Service Commission, therefore, is recommending that all physicians, dentists and veterinarians who are interested in civil service employment enrol with the Procurement and Assignment service, and that they definitely indicate on the questionnaire the governmental agency in which they desire employment.

The agencies which employ the largest number of physicians and dentists under civil service regulations are the Veterans Administration, the Indian Service (Department of the Interior), the Public Health Service (Federal Security Agency), the Panama Canal and the Children's Bureau (Department of Labor).

At present there is a shortage of fully qualified physicians who are available for employment in the federal civil service, and it is important that more of the physicians who are not available or qualified for commissions in the Army, Navy or Public Health Service offer their services during the war emergency in a civilian capacity in federal agencies having civilian medical services.

In accordance with an executive order, "war service" appointments are now being made in the various governmental agencies. Such appointments are for the duration of the war and and for six months thereafter. The physical requirements for war service appointments are liberal. Appointments are being made of physicians who qualify for the associate or full grade medical officer under the U. S. Civil Service Commission's current open continuous examination. To qualify as the associate or full grade medical officer, physicians must have graduated from an approved medical school subsequent to May 1, 1920.

The U. S. Civil Service Commission will utilize the information obtained by the Procurement and Assignment Service's enrolment program in recruiting physicians, dentists and veterinarians to fill the needs of the civilian medical, dental and veterinarian services of governmental agencies.

Verne K. Harvey, M. D., Washington, D. C., Medical Director, U. S. Civil Service Commission.

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DRIED BLOOD PLASMA

The Surgeon General of the Army has submitted for publication the following circular letter:

CIRCULAR LETTER NO. 28 (SUPPLY NO. 12)

1. Dried blood plasma is being added to the medical department supply catalog as standard item 16089 serum, normal human plasma, dried. This dried blood plasma is processed by certain selected manufacturers from blood donated to the American Red Cross. Sources of supply are such that, pending further instructions, this item will be furnished to the following installations only:

(*a*) All task, base and oversea forces.

(*b*) U. S. Army transports.

2. This item will not be furnished stations within the continental limits of the United States.

3. Liquid plasma centers now in the process of establishment will furnish liquid human plasma for stations within the continental United States. When this liquid plasma is generally available, policies concerning its distribution will be issued from this office by circular letter.

By order of the Surgeon General:

John A. Rogers, Colonel,
Medical Corps, Executive Officer.

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The price of liberty will be paid in Defense Savings Bonds and Stamps. Lend — not give — your savings for the war effort. Buy United States Defense Bonds and Stamps.

GOVERNMENT TO PAY FOR HOSPITALIZATION OF CIVILIANS INJURED BY ENEMY ACTION

Surgeon General Thomas Parran, U. S. Public Health Service, and Dr. George Baehr, Chief Medical Officer, Office of Civilian Defense, have issued a joint memorandum on details of the program of the government's paying for temporary hospitalization for civilians injured as a result of enemy action. The funds have been allocated to the U. S. Public Health Service from the President's Emergency Fund. The federal government will reimburse all hospitals caring for civilian casualties in the event of air raids or other enemy action at the rate of $3.75 a day. Any hospital in the nation, voluntary or governmental, may be used as a casualty receiving hospital in the Emergency Medical Service established by the Office of Civilian Defense. Certain institutions in "safe areas" may be used as emergency base hospitals for casualties or other patients whom it may be necessary to evacuate from urban hospitals in exposed areas. For this purpose federally owned equipment may be lent to the base hospital, and their staffs will be supplemented by physicians of the area, who will be commissioned in the reserve corps of the U. S. Public Health Service. The management and control of all such hospitals will remain the responsibility of the local or state authorities. In the establishment of emergency base hospitals, hospitals are now being surveyed and will be classified on a basis of size, equipment and standards of operation.

The organization of medical staffs for base hospitals as units affiliated with casualty hospitals will begin immediately. The physicians and dentists commissioned in the Public Health Service Reserve for service in these hospitals will receive the rank, pay and allowance equivalent to those of the medical corps of the army and will be selected from older age groups, from physicians with disabilities that make them ineligible for military service and from women physicians. They will be assigned to service in regions in which they live as far as possible and will be recruited from the stations of civilian hospitals and cleared through the Procurement and Assignment Service.

DECONTAMINATION OF EYES AFTER EXPOSURE TO LEWISITE AND MUSTARD

The Medical Division of the Office of Civilian Defense, Washington, D. C., submits the following information:

Since publication of the Office of Civilian Defense handbooks "First Aid in the Prevention and Treatment of Chemical Casualties" and "Protection Against Gas," further experience has shown that the 2 per cent solution of hydrogen peroxide recommended for the treatment of eyes, following lewisite burns may be injurious if used undiluted. The Chemical Warfare Service now recommends a single instillation in the eyes of a 0.5 per cent solution of hydrogen peroxide as soon as possible after contamination with lewisite. This solution may be prepared by diluting one part of a 2 per cent solution with three parts of water, or one part of a 3 per cent solution with five parts of water. The solution usually found in drug stores is the U. S. P. strength of 2.5 to 3.5 per cent hydrogen peroxide. A 0.5 per cent solution of potassium permanganate has also been found effective as an eye instillation following exposure to lewisite.

In planning decontamination stations, the Medical Division, Office of Civilian Defense, recommends that provision be made near the entrance of the second or shower room for the irrigation of the eyes of contaminated persons. The schematic sketch of a decontamination station in the Office of Civilian Defense publications mentioned shows the irrigation of eyes in the dressing room, whereas this should be carried out in the second or shower room before the bath is given. Delay until the casualty reaches the dressing room, will result in more serious injury to eyes which have been contaminated with mustard gas or lewisite.

SAYS USING SULFANILAMIDE DERIVATIVES OVERCOMES CONTAMINATION OF PLASMA

Contamination with bacteria, the only serious objection to storing plasma (the fluid portion of the blood) in the fluid state for transfusion is overcome by the use of derivatives of sulfanilamide, preferably sodium sulfathiazole, Milan Novak, M.D., Chicago, states in *The Journal of the American Medical Association* for February 14.

SPRINGFIELD

Springfield, Illinois, "The Home of Abraham Lincoln" and the capital of Illinois, is centrally located in the state, 185 miles southwest of Chicago and 90 miles northeast of St. Louis. It is located on the Sangamon River. It is served by the Baltimore & Ohio, Alton, the Chicago & Illinois Midland, the Illinois Central, and the Wabash steam railroads and the Illinois Terminal Railroad electric interurban lines.

The population is 75,503 (1940) within its city limits, with over 15,000 additional inhabitants in contiguous territory.

Springfield is a well planned city, situated in the midst of the rolling Illinois prairies. Recently completed as a water supply and recreational center, is one of the largest artificial lakes in the state, Lake Springfield, covering an extent of 15 miles in length, with a storage capacity of 21 billion, 400 million gallons of water.

The State Capitol, completed in 1887 at a cost of $4,000,000, is Springfield's most prominent building. It is constructed of gray limestone and granite in classic style of architecture and is surmounted by a massive dome 361 feet high.

Other fine public buildings are the Illinois Supreme Court Building, a $2,000,000 Federal Building, County Court House, City Hall, Elks' Club, Knights of Columbus Building, the Lincoln Library and the Illinois Centennial Building, costing $3,000,000, commemorating the one hundredth anniversary of the admission of Illinois as a state. This building contains, among other things, a splendid museum of natural history and a fine collection of papers and relics connected with the life of Lincoln.

Springfield is the seat of the Illinois Supreme Court and the United States District Court.

The Illinois State Fair, one of the largest and most successful State Fairs conducted in the country, is held each year in August under state auspices in Springfield. (The Fair may be suspended during the war emergency, to permit the use of the Fair Grounds for training of troops.)

Springfield has two large hospitals, Springfield Hospital and St. John's, two sanitariums and homes for the aged and for children.

The city has 1,000 acres in parks, boulevards and playgrounds. The largest parks are Washington, Lincoln, Bunn, Bergen, Pasfield and Carpenter, in which are provided athletic fields, tennis courts, swimming pools and three golf courses.

The connection of Abraham Lincoln with the history of Springfield started about 1837 when he removed to this city from New Salem and established a law partnership with John T. Stuart. Lincoln maintained his connections with Springfield until the time of his death at the close of the Civil War and the only home he ever owned in this city, located at Eighth and Jackson Streets.

Also connected with the early history of Springfield was General U. S. Grant who began his military career in the Civil War by being made Colonel of the 21st Illinois Infantry in Springfield. Stephen A. Douglas was a familiar figure in early Springfield.

In Oak Ridge Cemetery is a splendid gray granite monument erected to the memory of Abraham Lincoln. The lower part of this is a mausoleum containing the remains of the Great Emancipator and members of his family. In the center rises a shaft 121 feet high. At its base in front is a statue of Lincoln, and at the four corners are groups of statuary symbolizing the cavalry, navy, artillery and infantry of the United States. This monument, which originally cost about $350,000 contributed by the people from every part of the United States, was designed by the sculptor Larkin G. Mead and was dedicated in 1874.

The Lincoln Monument was remodeled by the state of Illinois, during 1930-31, at an expense of over $125,000. While its outward appearance was not changed, it was completely rebuilt, and extensive interior changes were made. It was dedicated with appropriate ceremonies by President Herbert Hoover, June 17, 1931.

Lincoln's old home is owned by the State and is open to the public. Each year hundreds of thousands of people, coming from every state in the Union and from every civilized nation on earth, visit the Lincoln Home, the Lincoln Tomb and other points connected with his associations here.

The present Sangamon County Court House was formerly the Capitol Building of the State, being the second building erected for that purpose. In it Lincoln made a number of his noted addresses, including his historic "House Divided Against Itself."

Vachel Lindsay — (born Nov. 10, 1879, died Dec. 4, 1931) American poet, was a native of this city, and much of his poetry was written about subjects related to it.

Springfield, settled in 1819, was organized and made the county seat in 1823, and was incorporated as a town and made the state capital in 1837. It became a city in 1840. The commission plan of government was adopted in 1911.

HISTORIC ATTRACTIONS ARE MANY *in Springfield*



The State Capitol Building



The Lincoln Home will interest many



Lincoln's Tomb



The Leland Hotel



St. Nicholas Hotel

CONVENTION HEADQUARTERS



Hotel Abraham Lincoln
Springfield

OFFICIAL PROGRAM
OF THE

One Hundred Second Annual Meeting
Illinois State Medical Society



HOTEL ABRAHAM LINCOLN
SPRINGFIELD, ILLINOIS
MAY 19, 20, 21, 1942

A Message Of Welcome From The Committee On Arrangements

In again welcoming the officials and ranks of Illinois physicians and their guests to the One Hundred Second Annual Meeting of the Illinois State Medical Society for 1942, we of the Executive Committee are keenly aware of the responsibility that is ours. The fact that this is a "war" meeting has been brought forcibly to our attention by the inevitable disruption of some of our plans and by some gaps left in our organization by last minute military orders. There have been and will be transportation and accommodation difficulties that only a wartime meeting could produce; there will be much pinch-hitting in all the Sections from the chairmen down; and war priorities will interfere seriously with some of our Exhibitors. We do not mind and we will not apologize for it. These things are necessary for the common good. We shall miss many absent friends, it is true, but our hearts will be with them and those of us who are left will take our little inconveniences and do their jobs cheerfully.

Those who make it here to Springfield will be doubly welcome as they have always been in past convention years. There will be study and golf for the men and women of the profession and tea and entertainment for the ladies. There will be good food for the Alumni and Fraternity Luncheons and surprises for the President's Dinner.

We hope to provide knowledge and inspiration for the trials ahead and fun and relaxation for those who carry the heavy responsibilities of the greatest of all professions. We intend to enjoy every minute of it and hope that all who come will leave refreshed in mind and spirit and will want to come again. Our membership will be on hand to help you get what you want when you want it so far as we can provide. All we ask is that you "come and get it!"

COMMITTEE ON ARRANGEMENTS
Hermon H. Cole, Chairman
Don W. Deal
Harry Otten
Richard F. Herndon

General Sessions

OPENING MEETING

TUESDAY AFTERNOON, MAY 19, 1942

Knights of Columbus Building
Columbus Hall

1:00 Meeting officially opened by the President, Charles H. Phifer, Chicago.
Invocation — A. G. Grummon, D. D., First Methodist Church, Springfield.
Address of Welcome — Hon. John W. Kapp, Jr., Mayor of Springfield.
Address of Welcome — Berton W. Hole, President, Sangamon County Medical Society, Springfield.
Report of Chairman, Committee on Arrangements, Hermon H. Cole, Springfield.
Adjournment for scientific meetings.

TUESDAY EVENING, MAY 19, 1942

Knights of Columbus Building
Columbus Hall

8:30 Oration in Medicine —
"Macrocytic Anemia."
Cecil J. Watson, Professor of Internal Medicine, University of Minnesota Medical School, Minneapolis, Minnesota.

9:00 Oration in Surgery —
"Surgical Management of Lesions of the Esophagus, Stomach, Rectum and Colon."
Frank Lahey, Lahey Clinic, Boston, Massachusetts.

WEDNESDAY AFTERNOON, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

1:30 President's Address —
Charles H. Phifer, President, Illinois State Medical Society, Chicago.

THURSDAY MORNING, MAY 21, 1942

Knights of Columbus Building
Columbus Hall

Induction of the President-Elect

Immediately following the completion of the second session of the House of Delegates, the President-Elect, Edward H. Weld, Rockford, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, Charles H. Phifer.

All members and guests at the meeting are invited to attend this interesting function.

Joint Session

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session of Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.

MEDICINE AND THE WAR

9:00 "A Prize for Good Health — Extending the 4-H Principles to Adolescent Youth."
Maurice L. Blatt, Chicago.

9:20 "Analysis of the Vision of 200 Consecutive Selectees."
G. Henry Mundt, Chicago.

9:40 "Neuropsychiatric Problems of the Present War."
Benjamin Boshes, Chicago.

10:00 "Medicine and the National Program."
Frank Lahey, Boston, Massachusetts.

10:20 "A Statistical Study of 500 Soldiers with Symptoms Referable to the Heart."
D. E. Markson, Chicago.

10:40 "The Detection of Venereal Disease in the Second Million Selectees."
R. A. Vonderlehr, Washington, D. C.

11:00 "Chest Findings in a Selected Group of Inductees — Roentgen Studies."
Earl Barth and Fay Squire, Chicago.

11:20 "Neurocirculatory Disease in Draftees."
Harry A. Durkin, Peoria.

11:40 "The Bedside Diagnosis of Parenchymatous Liver Disease."
Cecil J. Watson, Minneapolis, Minnesota.

Section Programs

SECTION ON MEDICINE

F. Garm Norbury Chairman
*M. Herbert Barker Secretary
Chauncey C. Maher Secretary Pro tem
*In service.

TUESDAY AFTERNOON, MAY 19, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Section on Surgery.

2:30 "Psychotherapy in General Medicine."
Tom Bentley Throckmorton, Des Moines, Iowa.

3:00 "Surgery of the Biliary Tract."
V. S. Counseller, Rochester, Minnesota.

3:30 MEDICINE IN REVIEW — 1941 (Papers limited to 10 minutes)
"Shock Therapy."
S. N. Clark, Jacksonville.
Blast Injuries of the Central Nervous System."
Louis J. Pollock, Chicago.
"Allergy."
Ralph Mills, Decatur.
"Surgical Management of Ulcers."
V. S. Counseller, Rochester, Minnesota.

4:30 "Results of the Illinois Pneumonia Control Program," 1938-1942.
Doctors Sagen, Prange and Rosi, State Department of Public Health, Springfield.

This paper presents the results of the Illinois pneumonia control program from its inception in November, 1938, to date. The operation of the program is briefly described, and the statistical results from a study of the case histories received for patients obtaining the benefits of the program are given.

The cases have been analyzed with reference to the prognostic factors of age, day of disease, when treatment was begun, lobe involvement, and disease complications. An evaluation of types of treatment with reference to these factors has been made with allowance for the combined effects of the factors as well as by their effect taken singly.

Discussion opened by Paul Rhoads, Evanston.

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Sections on Surgery; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.

(For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

2:30 Chairman's Address
"Engines of the Body."
F. Garm Norbury, Jacksonville.

2:50 "The Kenny Treatment of Infantile Paralysis During the Acute Stage." (Slides and Motion Pictures)
Philip Lewin, Chicago.

This paper presents Nurse Kenny's theory and practice in treatment of poliomyelitis during the acute stage. The hospital unit, objectives and methods are described together with a summary of results and the author's observations. Slides and motion pictures demonstrating the procedures will be shown.

3:10 "Hypochromic Anemia in Malignancy."
Harold Swanberg, Quincy.

This paper emphasizes the importance of treating the anemia that is invariably associated with malignancy and emphasizes the value of a simple, inexpensive iron preparation.

The efficacy of the various iron preparations are shown together with analysis of their relative cost to the patient.

3:30 "Studies on Mercurial Diuresis."
Italo Volini, Chicago.

Ammonium chloride is commonly used to promote either diuresis, or to enhance the effectiveness of organic mercurial diuretics. Gastrointestinal disturbances are common on the usual doses of six to eight grams daily. The present study combines a clinical and laboratory investigation of over one hundred fifty patients to determine first, the effectiveness of ammonium chloride as a diuretic alone; secondly, the changes induced in the body chemistry; and thirdly, the question whether urinary output is increased when ammonium chloride is give with the mercurial diuretic.

3:50 "Management of the Male Climacteric."
Clarence H. Boswell, Rockford.

This paper consists of a discussion of the male hormone, a comparison between the climacteric changes of the male and female and some suggestions as to treatment of situations arising during the male climacteric.

THURSDAY MORNING, MAY 21, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Section on Surgery.

9:00 "Nutrition in the Surgical Patient."
Dwight E. Clark, Chicago.

9:30 "Alcoholism and Traffic Problems."
Lowell Selling, Detroit, Michigan.

10:00 "Carcinoma of the Rectum, General Considerations."
Nathan A. Womack, St. Louis, Missouri.

Methods of diagnosis of cancer of the rectum will be considered, attention being given to the attitude toward adenomatous polyps of the rectum. The nature of an adequate operation will be discussed, as well as those factors that may be dealt with before, during and after operation that play an important part in the lowering of operative morbidity and mortality.

10:30 "The Problem of Bowel Obstruction in the Newborn."
Edwin M. Miller, Chicago.

In this presentation the author wishes to confine his remarks to the newborn infant who presents, within a few days after birth, the clinical signs of complete intestinal obstruction. The most common sites of atresia are at the duodenum and the terminal ileum. The clinical picture in each instance is striking and should be readily recognized, but too often is allowed to progress beyond the stage where the obstruction can be relieved by surgery. The author discusses, in detail, the diagnosis, laying special emphasis on the characteristic x-ray picture. This is illustrated in a series of seven successful congenital atresias of the duodenum, and two in the lower ileum.

Discussion opened by J. B. Gillespie, Urbana.

11:00 Clinicopathological Conference.

SECTION ON SURGERY

Loyal Davis Chairman
J. C. Thomas Rogers Secretary

TUESDAY AFTERNOON, MAY 19, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Section on Medicine.

(For Complete Program, See Section on Medicine.)

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Sections on Medicine; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, MAY 20, 1942

Knights of Columbus Building
Gymnasium

2:30 "The Myth of Post-operative Pneumonia."
J. R. Buchbinder, Chicago.

The essayist points out the importance of looking to the field of operation itself in abdominal surgery whenever complications, local or distant, are encountered. An interesting discussion of these complications is presented, bringing out the fallacies of the diagnosis of pneumonia in many of these cases. The differential diagnosis and treatment are discussed in detail.

2:50 "Burns Treated by Paper Tissue-Cod Liver Oil Ointment Dressings After Surgical Cleansing." Kodachrome Slides.
George Callahan, Waukegan.

A series of some 125 cases using this treatment shows the method to be gentle, simple, safe in minor and extensive burns and other lesions. The detail of gentleness of the paper tissue dressing in the bedridden or ambulatory patient is emphasized whatever ointment may be selected. In keeping with the current favorable medical literature dealing with burn therapy by ointment and nonadherent dressings of varying materials including or excluding the sulfonamides, the cod liver oil ointment was the one selected for this series.

Discussion opened by LeRoy H. Sloan, Chicago.

3:10 "Preventive Therapy in Recurrent Urinary Lithiasis."
E. H. Droegemueller, Elmhurst.

The author discusses the various factors involved in postoperative recurrence of calculi of the urinary tract. Therapy directed toward prevention of such recurrences is presented.

3:30 "The Diagnosis and Treatment of Surgical Lesions of the Mediastinum."
John Dorsey, Chicago.

The paper gives, with the aid of lantern slides, the differential points in the diagnosis of lesions of the mediastinum. Illustrations will be given of the successful treatment of these lesions.

Discussion opened by Stanton Friedberg, Chicago.

3:50 "Considerations Regarding the Depth of Anesthesia."
William Cassels, Chicago.

A discussion of the depth of anesthesia relative to the surgical requirements is given. The importance of anticipation of these requirements with reference to the choice of premedication, anesthetic agent and technique of administration is brought out. Depth and effects, in the use of the various agents are emphasized in the paper.

Discussion opened by Hugh O. Brown, Chicago.

4:10 "Massive Intestinal Resection."
Everett Coleman and D. A. Bennett, Canton.

Massive intestinal resection is of increasing interest with the present likelihood of military activities, because many of the cases reported have been the result of war time injuries. It is defined as the resection of 200 or more centimeters of intestine, and a review of the literature which is quoted indicated that these extensive resections have been more common than one might otherwise believe, and that a considerable number of them have been successful. An additional case is reported, necessitated by a gunshot wound, and a report on the postoperative x-ray findings and a study of the physiology of the intestinal tract a year later is given.

Discussion opened by Karl A. Meyer and Percy E. Hopkins, Chicago.

4:30 "Treatment of Surgical Shock."
Arkell M. Vaughn, Chicago.

The pathogenesis of shock has been and still is the basis of much experimental and clinical research. In spite of the multiple problems arising from this feature of the subject, fairly satisfactory treatment has been involved. In this paper a resume of the currently accepted treatment of shock, both empiric and specific is presented.

Discussion opened by John L. Keeley, Chicago.

THURSDAY MORNING, MAY 21, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Section on Medicine.
(For Complete Program, See Section on Medicine)

SECTION ON EYE, EAR, NOSE AND THROAT

Clifton Turner Chairman
G. Henry Mundt Secretary

TUESDAY MORNING, MAY 19, 1942

Masonic Temple
Third Floor

9:00 "Accommodative Power Before and After Head Injury."
Virgil Wescott, Chicago.

In a previous communication seventy-two cases of head injury were reported. This series tended to prove that the difficulties in reading of which the patients complained were not due to loss of accommodation. Severe accidents becoming more frequent, it is now possible to report studies in accommodation before and after head injury.

Discussion opened by George Guibor, Ottawa.

9:30 "Common Diseases Affecting Sound Conduction."
H. B. Perlman, Chicago.

Lesions of the conducting mechanism produce a great variety of audiograms. The older teaching that lesions of the conducting apparatus produce a low tone deafness while high tone loss means a nerve lesion is incorrect. Single lesions of the conducting mechanism as seen in the clinic or produced in the laboratory are analyzed for their effect on the threshold curve.

"Sound Conduction in the Human Ear."
(A Motion Picture Demonstration)
H. G. Kobrak, Chicago.

10:00 "A Review of Amblyopia ex Anopsia."
George E. Morgan, Bloomington.

This paper will be organized around a review of the recent literature on the subject first, then a discussion of the reasons for failure in the treatment of this type of amblyopia. The results of a small series of our cases will be shown. Lantern slides.

Discussion opened by Walter Stevenson, Quincy.

10:30 "Surgical Diathermy in the Treatment of Chronic Dacryocystitis."
Robert H. Good, Oak Park.
Discussion opened from the floor.

11:00 "Pathologic Findings in Eyes Enucleated for Glaucoma."
Louis Bothman, Chicago.

Blind, painful eyes with high tension are frequently seen by the ophthalmologist for the first time just before enucleation; hence, only a surmise can be made from the history as to the cause of the secondary glaucomas. A study of such eyes reveals a variety of pathological states which are not only interesting but very instructive to review.

TUESDAY AFTERNOON, MAY 19, 1942

Masonic Temple
Third Floor

2:00 "Chronic Osteomyelitis of the Skull."
Hans Brunner, Chicago.

(1) Differentiation between acute and chronic osteomyelitis of the skull; (2) Diagnosis of chronic osteomyelitis of the skull; (3) Demonstration of cases showing the symptomatology and treatment of chronic osteomyelitis of the skull.

3:30 "Some Visual Problems in Modern Industry."
Hedwig S. Kuhn, Hammond, Indiana.

The physical requirements that industry of necessity sets up for its human staff to meet are rapidly changing and are increasingly likened to aptitudes of mind and body. Of the **visual** performance being scrutinized in personnel and training departments, in the study of production statistics as well as for safety, etc. It is because **visual performance** or "Eyes for the Job" has superseded the mere recording of acuity that our whole research project dealing with the appraisal of vision in industry was undertaken.

From this original survey of over 16,000 employees instituted to define and evaluate all factors in visual function important to industry, have come new spearheads, new ideas and objectives. There have been some rather startling explosions of solid concepts and some timely applications to our war production. The new developments have arisen partly because of the application of basic statistical analytical methods, to the problem and the linking of the effort of industrial psychologists with those of the medical man.

Of the mass of material gathered, only a few special items will be considered here:

A — The urgent need of closing the gap between the eye man, practicing **clinical** ophthalmology in an industrial community, and industry itself, which needs this same eye man to practice **industrial** ophthalmology (in addition to the care of eye injuries, etc.)

B — The factor of color discrimination in industry.

C — The need for establishing standard tests and in the use of these in the evaluation of industrial efficiency.

2:00 "Present Trends in the Treatment of External Ocular Disease."
Peter C. Kronfeld, Chicago.

To some extent the therapeutic armamentarium of the ophthalmologist has always been and still is in a state of flux, new items being added, old ones being discarded and discarded ones being revived.

Among the new additions are the chemotherapeutics of the sulfonamide group applied locally in the form of aqueous solutions, jellies, ointments, powders or carried into the cornea by iontophoresis.

In the treatment of progressive corneal ulcers not sufficiently controlled by chemotherapeutics or disinfectants "decompression of the cornea" (S. R. Gifford) in the form of the delimiting keratotomy has come into the foreground again.

The indications and contraindications for foreign protein therapy have become more accurately defined.

The significance of an abnormally low rate of lacrimal secretion has become generally recognized.

With regard to the use of vitamins in the treatment of external ocular diseases, judiciousness has taken the place of the over-optimism which prevailed a few years ago. Riboflavin deficiency has proved difficult to recognize on the basis of ocular findings only.

The indications for paracentesis in acute or subacute anterior uveitis are still very indefinite although occasionally startling improvements have been obtained.

TUESDAY EVENING, MAY 19, 1942

6:30 Banquet — Leland Hotel.

WEDNESDAY MORNING, MAY 20, 1942

Masonic Temple
Third Floor

9:00 "Factors Determining the Duration of Acute Tonsillitis."
Alex M. Berman and M. Tamari, Chicago.

This paper will discuss the factors determining the duration of acute tonsillitis, mainly in the Chicago area. Such influencing factors as weather, seasonal changes, and climate will be considered. Other factors such as general systemic conditions, bacteriologic influences, as well as anatomical and pathological changes of the lymphoid tissue itself, which influence acute tonsillitis will be taken up.

Slides illustrating the above factors will be shown.

Discussion opened by George W. Woodruff, Joliet.

9:30 "Conservation of Vision Among School Children in Illinois."
Miss Audrey M. Hayden.

10:00 "Mediastinits Secondary to Surgical Pathology."
Glenn Greenwood, Chicago.

Mortalities effected by mediastinitis secondary to cervical pathology are still too high. Whether mediastinitis be incurred during war or civilian life, effective therapeutic measures are still difficult, due, in a great part, to local anatomical peculiarities. Therefore, a brief review of pertinent anatomy, description of surgical approaches supplemented by case abstracts will be presented.

Discussion opened by John F. Delph, Chicago.

10:30 "The Larynx, Tracheobronchial Tree and Esophagus in Kodachrome."
Paul H. Holinger, Chicago.

This color motion picture film shows the normal anatomy, and pathology seen through the laryngoscope, bronchoscope and esophagoscope.

Discussion opened by J. J. Potter, Rockford.

11:30 Business Meeting.

WEDNESDAY AFTERNOON, MAY 20, 1942

Masonic Temple
Third Floor

INSTRUCTION COURSES

2:00 "Audiometry and Hearing Aids."
C. C. Bunch, Evanston.

3:30 "Management of Sinus Disease."
T. C. Galloway, Evanston.

3:30 "Gonioscopy."
Thomas D. Allen, Chicago.

"Plastic Surgery."
Samuel Salinger, Chicago.

SECTION ON PUBLIC HEALTH AND HYGIENE

*Walter C. Earle Chairman
Roland R. Cross Chairman Pro tem
Henry C. Niblack Secretary
*In service.

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Sections on Medicine; Surgery; Radiology; Pediatrics; Obstetrics and Gynecology. (For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, MAY 20, 1942

Elks Club
Third Floor East

2:30 "The Doctor Treats the Problem Child."
Paul L. Schroeder and George Perkins, Chicago.

2:50 "Public Health in War Time."
H. A. Holle, Chicago.

3:10 "Susceptibility of the Adult to Diphtheria."
A. J. Levy, Gilman.

3:30 "A Ten-Year Survey of Poliomyelitis in the Chicago Area."
Sidney O. Levinson and Albert M. Wolf, Chicago.

3:50 Title to be announced.
Allen McLaughlin, Springfield.

4:10 "The Survey of the State Department of Public Health."
Carl Buck, New York.

THURSDAY MORNING, MAY 21, 1942

Elks Club
Third Floor East

Joint session with Sections on Pediatrics, and Obstetrics and Gynecology.
(For Complete Program, See Section on Obstetrics and Gynecology.)

SECTION ON RADIOLOGY

E. E. Barth Chairman
Cesare Giaturco Secretary

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Sections on Medicine, Surgery; Public Health and Hygiene; Pediatrics; Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, MAY 20, 1942

Hotel Abraham Lincoln
Parlor K

12:15-1:30 Luncheon.
The members of the section will be luncheon guests of the Illinois Radiological Society at the place of meeting, Parlor K, Hotel Abraham Lincoln.

1:30-2:00 Business Session.

2:00 "The Value of Miniature Chest Films."
Arthur Webb, Glen Ellyn.
This paper discusses the use of the 4 x 10 stereo miniature film as used in fluoroscopic roentgenography in checking on contacts of tuberculous patients and in doing community surveys for case finding. It stresses the advantage of the stereo film over the single 4 x 5 miniature and compares it with the 14 x 17 single standard film.
Discussion opened by Darrell H. Trumpe, Springfield.

2:30 "Roentgen Ray Aspects of Rheumatic Fever."
Sol Ditkowsky, Normal.
An analysis of roentgen ray studies in 500 institutional children in which the percentage of rheumatic heart disease is high.
Roentgen ray studies are of importance diagnostically in subclinical rheumatic heart disease.
A discussion of changes in the cardiac silhouette in proven cases of rheumatic heart disease.
When is an esophogram pathological?
Abnormal cardiac contour denotes pathology.
Discussion opened by Edwin Rypins, Bloomington.

3:00 "Considerations on a Thousand Chest X-ray Examinations Performed on Men Applying for Employment."
A. A. Bauer, Chicago.
A survey of 1,000 chest examinations made on men applying for employment. The men range in age from 18 to 40. The findings are classified into types.
Discussion opened by Harold Davis, Chicago.

3:30 "Simple Foreign Body Removal."
Sidney Mesirow, Chicago.
A simple method of removing a foreign body by combined fluoroscopy and surgical exploration is described. This method is based on the principles of the "nearest point method" described in the Army x-ray Manual, second edition. The method involves the use of a small hand screen which can be placed in the field of operation without contaminating the field.
The military as well as civilian applicability of the method is discussed.
Discussion opened by Fay Squire, Chicago.

4:00-5:00 Film Clinic.
Edwin Rypins, Bloomington; A. A. Bauer, Chicago; George M. Landau, Chicago; Wm. DeHollander, Springfield; Fauntleroy Flinn, Decatur; and R. E. Madden will present interesting cases of proven diagnosis.
The film clinic will be conducted by Fred Decker, Peoria.

SECTION ON PEDIATRICS

Craig D. Butler Chairman
A. J. Fletcher Secretary

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; and Obstetrics and Gynecology.
(For Complete Program, See Joint Session.)

WEDNESDAY AFTERNOON, MAY 20, 1942

Elks Club
Lodge Room

2:30 "The Physiologic Basis of Parenteral Fluid Administration."
Donald Cassels, Chicago.
3:00 "Technic of Intravenous Injection in the Infant."
Mandel L. Spivek, Chicago.
3:10 "Indication for Blood Transfusion and Various Saline Solutions."
James D. McKinney, Campaign.
3:20 "Observations on the Value of Intravenous Blood and Fluids in the Treatment of Acute Infections in Young Infants."
William Raycraft, Chicago.
3:30 "Methods of Preventing Reactions from Transfusions of Blood, Plasma, and Other Fluids."
E. H. Fell, Chicago.
3:40 "The Parenteral Administration of Various Therapeutic Agents."
Robert D. Hart and Orville Barbour, PePoria.
Discussion of papers opened by F. W. Schlutz, Chicago, assisted by W. L. Crawford, Rockford, and Robert A. Black, Chicago.

THURSDAY MORNING, MAY 21, 1942

Elks Club
Third Floor East

Joint session with Sections on Public Health and Hygiene, and Obstetrics and Gynecology.
(For Complete Program, See Section on Obstetrics and Gynecology.)

SECTION ON OBSTETRICS AND GYNECOLOGY

Milton E. Bitter Chairman
Clyde J. Geiger Secretary

TUESDAY AFTERNOON, MAY 19, 1942

Elks Club,
Lodge Room

2:30-5:00
"The Tuberculous Obstetric Patient."
Fred M. Meixner, Peoria.
Pregnancy in the tuberculous patient is a serious complication. View points differ as to proper procedure to follow. No one has shown definitely that pregnancy is good for health of a tuberculous woman in any stage of tuberculosis. Pregnancy places severe strain on a tuberculous woman's resources and strength, both before and after delivery. More modern methods of treatment of chest lesion makes it less hazardous than in the past. Prognosis depends on type of chest lesion and adequacy of treatment of chest lesion. Close cooperation between obstetrician and phthisiologist necessary to give best prognosis. Care after delivery important.
Discussion opened by C. Wesley Eisele, Chicago.

"The Third Stage of Labor."
Richard Paddock, St. Louis, Missouri.
This paper reviews briefly the accepted physiology and mechanism of the third stage of labor. A discussion of the hazards of the third stage of labor is presented. Factors increasing the hazards of the third stage are outlined. Certain trends in the present day management of the third stage are emphatically criticized. A proper observance of the normal mechanism of the placental stage is recommended.
Discussion opened by James E. Fitzgerald, Chicago.

"Anemia in Pregnancy."
E. Graham Evans, Aurora.

In one hundred and seventeen private obstetrical cases who had red blood counts and hemoglobin determinations at each prenatal visit, 70.1% had hemoglobin below 65% Sahli (14.5 grams 100%) at some time during pregnancy although only 3.9% were below on first examination. Treatment with simple ferrous preparations raised the hemoglobin in the later stages of pregnancy. At six weeks postpartum the blood level was higher than at the onset of pregnancy in the treated cases. The red blood count showed moderate lowering but not in proportion to the lowered hemoglobin.

Discussion opened by John R. Wolff, Chicago.

"The Etiology and Treatment of Functional Uterine Bleeding."
John W. Huffman, Chicago.

Functional uterine bleeding is considered in the light of the factors causing it. Study of a group of patients who were followed for a considerable time or who were subjected to surgery made it possible to classify the causative lesions into several groups. An analysis of this classification indicated the necessity for searching for the underlying cause in each case of so-called functional flow. Discussion of treatment, while stressing the use of endocrine preparations in appropriate cases, emphasizes the need for individualization. The therapy chosen depends largely on the etiologic factor making the bleeding.

Discussion opened by Hubert L. Allen, Alton.

"One Thousand Consecutive Timely Forceps Extractions."
Wm. H. Rubovits, Chicago.

Timely extraction refers to the delivery of a primipara or a multipara with well preserved birth canal, before the pelvic floor has been devitalized beyond the possibility of physiologic regeneration caused by prolonged second stage of labor. Adequate perineotomy is employed routinely. The lantern slide illustrations were drawn by the artist at the time of delivery. Results justify this form of "meddlesome obstetrics" in experienced hands.

Discussion opened by C. J. Heiberger, Peoria.

WEDNESDAY MORNING, MAY 20, 1942

Knights of Columbus Building
Columbus Hall

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; and Pediatrics.

(For Complete Program, See Joint Session.)

THURSDAY MORNING, MAY 21, 1942

Elks Club
Third Floor East

Joint session with Sections on Public Health and Hygiene, and Pediatrics.

9:00-12:00

"Fetal Distress During Labor."
Curtis J. Lund, Madison, Wisconsin.

Nearly one-half of the stillbirths occur during labor. Factors associated with oxygen transportation and carbon dioxide removal account for a significant amount of these deaths.

Proper management of fetal distress will be discussed in regard to obstetric factors favoring the development of this complication and as to methods of diagnosis. Methods of treatment will be emphasized, particularly those concerning the choice and sequence of therapy.

"Respiratory Disturbances in the Newly Born Infant."
Edith L. Potter, Chicago.

Disturbances in the establishment of respiration and in its normal maintenance during the first few days of life are largely dependent on conditions existing prior to birth. They may be divided into three groups; those due to abnormality of nervous control (prematurity, mechanically induced intracranial hemorrhage, asphyxial intracranial hemorrhage, non-hemorrhagic increase in intracranial pressure, chemical injury of nerve cells); those due to intrinsic lung or tracheal lesions (pulmonary hemorrhage, aspiration of excessive debris from amniotic fluid, pneumonia, inadequate alveolar development, tracheal stenosis); those due to other visceral defects (pleural effusion, diaphragmatic hernia, cardiac hypertrophy, polycystic kidneys).

Discussion opened by Orville Barbour, Peoria and Wm. F. Windle, Chicago.

"The Affect of the War on the Maternal Welfare Program in Illinois."
Frederick H. Falls, Chicago.

The shortage of medical and nursing personnel to serve the civilian population must be met by increasing the efficiency of those available to carry on the work. For the medical men this may be accomplished by increasing the percentage of patients delivered in hospitals, concentrating facilities for prenatal care of the indigent, concentration of complicated cases in larger maternity hospitals when possible, subsidizing hospitals and physicians in reasonable amount of care of indigents and a study by the county medical society Maternal Welfare Committee of the problems presented in each county.

Discussion opened by T. B. Williamson, Mt. Vernon.

"The Standardization of Maternity Facilities in Illinois Hospitals."
Howard Lewis Penning, Springfield.

Since the 1939 session of the General Assembly amended the Maternity Hospital Act and placed responsibility for supervision of maternity facilities in hospitals and maternity homes in the State Department of Public Health, the Department has conducted a program to standardize those facilities. Much progress has been made, and many times problems have come to light. The Health Department has also been able to obtain valuable clinical data in obstetrics.

Discussion opened by Frederick H. Falls, Chicago.

"Opportunities for Further Reduction of Newborn Morbidity and Mortality."
Arthur H. Parmelee, Oak Park.

A better understanding of the problems of the newborn by physicians as well as nurses who have to do with their care has resulted in a gratifying improvement in the care of the newly born and premature infant in the last few years. This satisfactory change in the status of the newborn particularly in larger hospitals but also in rural areas has been greatly aided by an increased interest on the part of public health officials. There is still plenty of room for improvement in the morbidity and mortality statistics in this field. By coordinating the efforts of obstetricians, pediatricians and public health workers we can improve particularly the situation in regard to the care of the premature infant. Lessening the number of infants with severe asphyxia, improving the technique of resuscitation, avoiding serious infections in the newborn nurseries and improving the methods of feeding especially in regard to an emphasis on breast milk are of enormous importance in the reduction of infant mortality.

Discussion opened by Walter M. Whitaker, Quincy.

PROGRAMS OF SPECIAL ORGANIZATIONS

SECRETARIES' CONFERENCE

Carl E. Clark, Chairman Sycamore
R. T. Pettit, Vice-Chairman Ottawa
C. Otis Smith, Secretary Oak Park

TUESDAY EVENING, MAY 19, 1942

Hotel Abraham Lincoln

"Procurement and Assignment of Physicians for Military Service."
Charles H. Phifer, President, Illinois State Medical Society, Chicago.

"The Role of the Physician in Civilian Defense Programs."
John S. Coulter, Chairman of Physicians in Defense Work, Chicago.

GOLF

Doctors attending the State Convention, who enjoy the elusive game of golf, are going to find the many courses in excellent condition. Springfield has three Municipal Courses and two very fine Country Club Courses. Oakcrest Country Club is five miles east of the city and Illini Country Club is located in the southwest part of the city.

On Tuesday morning, May 19th, at the Illini Country Club there will be a tournament held for the doctors attending the Convention. Suitable prizes will be on hand and bankers' handicap will be used. A trophy that has been played for other years will be one of the prizes. The Illini Course is the one you have always played on here and you know it is good.

If you want any other information, write the Committee:

Fred P. Cowdin, Chairman
Paul Levis
J. L. Schilsky

FIFTY YEAR CLUB LUNCHEON

The Fifty Year Club will hold a noonday luncheon at the Abraham Lincoln Hotel, Springfield, Illinois, Wednesday, May 20th, during the State Society meeting. Drs. W. A. Evans of Aberdeen, Mississippi; Carl Black of Jacksonville, Illinois and other Fifty Year members will address the Club.

This promises to be an unusually interesting program and all members are requested to secure their tickets early so that the Hotel will know how many guests to expect.

The tickets will be on sale at the registration desk.

Andy Hall, Chairman,
Fifty Year Club

MEDICAL WOMEN'S ASSOCIATION

The Illinois Medical Women's Association will hold a dinner at the St. Nicholas Hotel on Tuesday evening, May 19, at 6:00 P.M.

ILLINOIS SOCIETY OF PATHOLOGISTS

Edwin F. Hirsch, President Chicago
I. Davidsohn, Secretary-Treasurer Chicago
O. H. Saphir, Chairman, Program Committee Chicago

TUESDAY MORNING, MAY 19, 1942

Elks Club
Lodge Room

9:00 "Subdural Hematoma."
Paul C. Bucy, Chicago.

9:30 "Myocarditis."
Eleanor Humphreys, Chicago.

10:00 "The Storage and Significance of Tissue Glycogen in Health and Disease."
Samuel Soskin, Chicago.
15 Minute Intermission

10:45 Clinicopathological Conference conducted by John F. Sheehan and George Hellmuth, Chicago.

12:00 Business Meeting.

PHYSICIANS' ASSOCIATION DEPARTMENT OF PUBLIC WELFARE STATE OF ILLINOIS

Rudolph G. Novick President
Ethel A. Chapman Secretary-Treasurer

TUESDAY MORNING, MAY 19, 1942

Knights of Columbus Building
Columbus Hall

9:00-12:00

"Treatment of Mental Disorders by Electrically Induced Convulsions."
Erich Otten, Jacksonville.

The results of electric shock treatment in psychosis as obtained by the Jacksonville State Hospital is being discussed. The treatment was most beneficial in cases of Involutional Melancholia, inefficient in Schizophrenic cases, and of no avail in cases of Psychoneurosis except that it acts as a form of psychotherapy in the latter cases.

Discussion opened by I. Finkelman, Chicago.

"A Preliminary Report on the Attempts to Control Tuberculosis at the Chicago State Hospital."
M. Greenberg and J. V. Edlin, Chicago.

This paper describes the practical ways and means introduced at the Chicago State Hospital to combat tuberculosis by fluoroscopy. The tuberculosis population was increased four times, and it is probable that about 10% of the population will have active tuberculosis.

Discussion opened by Dr. Davison, Chicago.

"Centrally Located Tumors of the Frontal Parts of the Brain."
W. R. Kirschbaum, Manteno.

A report of three cases (Cranio-pharyngioma, Astrocytoma, Carcinoma-metastasis) is presented. The clinical symptomatology common to them and their differences are discussed. Special reference is made to the involvement of the basal ganglia and frontal lobes. The gross localization, symmetrical expansion and special features of the histopathological studies are discussed and shown in photographs.

Discussant will be announced at the meeting.

"Tuberous Sclerosis."
H. Josephy, Lincoln.

A short outline of the clinical symptoms will be given. Two post mortem specimens will be presented, demonstrating the typical findings upon the nervous system, the kidneys, the heart, and the skin. One of the cases is "typical," and the other is atypical and proves the rare incidence of a real tumor in the brain, arising from malformative growth. The intra vitam diagnosis will be discussed.

Discussion opened by E. Liebert, Elgin.

"Prognostic Factors in Cases of Psychoses Following Pregnancy."
E. A. Chapman, Elgin.

This is a study of the prognostic factors involved in patients who had developed a psychosis shortly after an apparent normal pregnancy. Personality factors seem to play a most important part in the prognosis.

Discussion opened by D. Haffron, Chicago.

"Acute Psychosis in Selectees."
S. D. Klow, Elgin.

The author has assembled a large number of data on the prepsychotic personality and on the symptomatology of abnormal behavior developed in persons who had been inducted in the army. Especial emphasis is laid on schizophrenic reaction type. These cases are being discussed in detail.

Discussion opened by F. G. Norbury, Jacksonville.

"Psychotherapeutic Aspects of State Hospital Psychiatry."
George Perkins, Chicago.
The use of limited psychotherapy in the State Hospital Service is discussed in this paper. The author will discuss several cases in whom psychotherapy was a great help in psychotic patients so that the patient could comfortably live on the outside and be released from the State Hospital. Increased and more emphasis should be laid upon this form of therapy in our state hospitals.
Discussion opened by C. Reed, Elgin.

"A Rorschach Study in a Case of Frontal Lobe Lesion."
John Endacott, Manteno.
(To be read by title). A new type of pattern is being discussed as found in the Rorschach test as discussed by the author.

"Caromine in the Therapy of the Psychoses."
Bernard Skorodin, Chicago.
(To be read by title). The author discusses the therapeutic affect of coramine in psychotic patients. The results obtained are quite promising. Reaction of coramine similar to that of metrazol.

ILLINOIS CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS

Otto C. Schlack, President Oak Forest
George Thomas Palmer, Vice-President .. Springfield
Darrell H. Trumpe, Secretary-Treasurer .. Springfield

TUESDAY, MAY 19, 1942

Elks Club
Third Floor East

11:00 A. M. Business Meeting.
12:00 Noon Luncheon.
"Bronchial Obstruction as Visualized by Bronchoscopic Cinematography." (Motion Picture)
Paul H. Holinger, Chicago.
Film Clinic.
Robert K. Campbell, Springfield.
Members of the medical profession are invited to attend the luncheon. Meeting will be adjourned by 1:00 P. M.

MEETINGS OF THE HOUSE OF DELEGATES

TUESDAY AFTERNOON, MAY 19, 1942

Knights of Columbus Building
Gymnasium

3:00 First meeting of the House of Delegates called to order by the President, Charles H. Phifer, for Reports of Officers, Councilors, Committees, Appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

THURSDAY MORNING, MAY 21, 1942

Knights of Columbus Building
Gymnasium

9:00 Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committees and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

MATERNAL WELFARE COMMITTEE LUNCHEON

The fifth annual luncheon of the Illinois State Maternal Welfare Committee will be held at noon on Wednesday, May 20 at the Hotel Abraham Lincoln in Springfield.
The program will be a round table discussion on toxemias of pregnancy led by Dr. F. H. Falls of Chicago; Dr. A. B. Owen, of Rockford and Dr. W. C. Scrivner of East St. Louis.
All physicians of organized medicine are cordially invited to attend.

SCIENTIFIC EXHIBITS

Frank J. Jirka, Chairman Chicago
James P. Simonds, Director of Exhibits Chicago

"Health and War"
Exhibited by the State of Illinois, Dwight H. Green, Governor, Department of Public Health, Roland R. Cross, M.D., Director, Springfield (on loan from British Library of Information).
"The Wartime Speed-up in Health Protection"
The State of Illinois, Dwight H. Green, Governor, Department of Public Health, Roland R. Cross, M.D., Director, Springfield.
"Pulmonary Tuberculosis"
Differential Diagnosis and Treatment. Karl J. Henrichsen, Chicago.
"Tumors of the Chest"
Jerome R. Head, Chicago.
"Burns Treated by Cod Liver Oil Ointment-Paper Tissue Dressing"
A treatment, gentle, simple, safe, in minor and extensive burns and other lesions. George B. Callahan, Waukegan.
"Health Education in the Doctor's Office"
Thomas G. Hull, American Medical Association, Chicago.
"Endocrine Regulation of Growth"
W. O. Thompson, N. J. Heckel and R. P. Morris, Chicago.
"Radium Treatment of Carcinoma of the Cervix Uteri"
Motion Picture in technicolor showing technique and statistical results in a series of cases. Frank E. Simpson, Chicago.
"Short Wave Diathermy"
Technical and clinical considerations. Committee on Physical Therapy. Milton G. Schmitt, Chicago.
"Amputation at the Knee-Joint"
A physiologic amputation. S. Perry Rogers, Chicago.

"Medical Profession in Civilian Defense"
Roland R. Cross, H. L. Pettitt, Springfield, John S. Coulter, Chicago.

"An Improved Method for Fixation of Fractures of the Neck of the Femur"
A. A. Mertz, Decatur.

"Treatment of Epitheliomas with Combination of X-Ray and Destructive Procedures. Report of Results with Six-Hundred Lesions"
John M. McCuskey, Peoria; William J. Morginson, Springfield.

"Medical Care Program for Recipients of Old Age Assistance and Aid to Dependent Children"
Division of Public Assistance, State Department of Public Welfare, Fletcher C. Kettle, Superintendent, Springfield.

"Gastroscopy as an Aid in Diagnosis"
Gastroscopic Findings in Pulmonary Tuberculosis.. Leo L. Hardt, LeRoy H. Sloan, Morris Weissman, Chicago.

"Skeletal Traction through Metacarpals"
For severe fractures of the forearm. Laurence M. Marsh and John D. Ellis, Chicago.

"Cancer Control"
Women's Field Army, American Society for the Control of Cancer, State Commander, Mrs. Arthur I. Edison, Chicago.

"Endometriosis"
Joseph A. Tuta, Chicago.

"A Photographic Exhibit of Skin Diseases Peculiar to War"
Edward A. Oliver, Samuel Zakon, Avis Gregersen, Chicago.

"Rectal Sodium Pentothal as a Basal Anesthetic to Supplement General, Local or Spinal Anesthesia."
M. L. Weinstein, E. L. Adams, and G. Light, Chicago.

"Abortion"
F. H. Falls, Chicago.

"Inoperable Facial Defects: Prosthetic Correction"
Adolph M. Brown, Chicago.

Technical Exhibitors

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
The Armour Laboratories, Chicago, Illinois
Ayerst, McKenna & Harrison, Rouses Point, N. Y.
Biochemical Research Laboratories, Chicago, Illinois
The Borden Company, New York, N. Y.
Burroughs Wellcome & Company, New York, N. Y.
Camel Cigarettes, New York, N. Y.
Carnation Company, Oconomowoc, Wisconsin
Doho Chemical Corporation, New York, N. Y.
Eli Lilly and Company, Indianapolis, Indiana
C. B. Fleet Co., Inc., Lynchburg, Virginia
General Electric X-Ray Corporation, Chicago, Illinois
Gerber Products Company, Fremont, Michigan
H. J. Heinz Company, Pittsburgh, Pennsylvania
Horlick's Malted Milk Corporation, Racine, Wisconsin
The Kelley-Koett Mfg. Co., Inc., Covington, Kentucky
Kellogg Company, Battle Creek, Michigan
Lederle Laboratories, Inc., Chicago, Illinois
Mead Johnson & Company, Evansville, Indiana
The Medical Protective Company, Fort Wayne, Indiana
Mellin's Food Company, Boston, Massachusetts
Merck & Company, Inc., Rahway, New Jersey
The Wm. S. Merrell Company, Cincinnati, Ohio
The C. V. Mosby Company, St. Louis, Missouri
M & R Dietetic Laboratories, Inc., Columbus, Ohio
V. Mueller and Company, Chicago, Illinois
A. E. Mallard, Detroit, Michigan
Nutrition Research Laboratories, Chicago, Illinois
Parke, Davis & Company, Detroit, Michigan
Pet Milk Sales Corporation, St. Louis, Missouri
Petrogalar Laboratories, Inc., Chicago, Illinois
Philip Morris & Co. Ltd. Inc., New York, N. Y.
W. B. Saunders Company, Philadelphia, Pennsylvania
Sharp & Dohme, Philadelphia, Pennsylvania
Smith, Kline & French Laboratories, Philadelphia, Pennsylvania
E. R. Squibb & Sons, New York, N. Y.
Frederick Stearns & Company, Detroit, Michigan
Sutliff & Case Co., Inc., Peoria, Illinois
White Laboratories, Inc., Newark, New Jersey
Winthrop Chemical Company, New York, N. Y.
John Wyeth & Brother, Inc., Philadelphia, Pennsylvania

NOTES ON TECHNICAL EXHIBITS

ABBOTT LABORATORIES, Booth 8

Be sure to visit this booth where the Abbott-trained representatives in attendance will be more than glad to exchange notes with you regarding the newer Abbott specialties on display.

Nembutal, Pentothal Sodium, Sulfa-drugs, Intravenous Solutions, Bismarsen, Bismo-Cymol, Gold Sodium Thiosulfate, Sorbitol, Strophanthin-K, Cofron, Iberin, Histamine Diphosphate, Glucophylline, Trisodarsen, Acetarsone, Aldarsone, Multi-Vitamin products, Thiamin, Riboflavine, Nicotinic Acid, Nicotinamide, Sod. Pantothenate, Ejectal, Pyrodoxine, Klotogen, Hykinone, Kayquinone, Thromboplasin, Natopherol, Estrone, Estriol, Progestin, etc., etc., are included in this comprehensive exhibit.

A hearty welcome awaits you here. SO! STOP IN AND SEE US!

A. S. ALOE COMPANY, Booth 31

A. S. Aloe Company cordially invites you to visit Booth 31. They will have on display a complete line of American-made Stainless Steel Surgical Instruments, Surgical Supplies, Laboratory Apparatus and Physical Therapy Equipment.
Many new and exclusive items will be shown. Mr. T. H. Greenwell will be in attendance.

THE ARMOUR LABORATORIES, Booth 23

The Armour Laboratories are in the unique position of having access to one of the world's largest supplies of fresh glandular materials and over a period of fifty years have developed a technique of blending, processing and assaying these variable materials to produce preparations of maximum and unvarying potency.

In attendance at the Armour booth you will find representatives who will gladly furnish information on new Endocrine Products of the Armour Laboratories. A cordial invitation is extended to all members of the Illinois State Medical Society to visit our display in booth No. 23. Mr. R. H. Andrew will be in charge.

AYERST, McKENNA & HARRISON (UNITED STATES) LIMITED, Booth 30

"ADVANCEMENT IN THE FIELD OF ORAL HORMONAL THERAPY"

We take pleasure, particularly at this time, in announcing to the medical profession that a new form of estrogen, demonstrating high oral activity will shortly be made available.

Preliminary reports on the oral administration of this new conjugated estrogen, elaborated at the Ayerst Experimental Laboratories, are such as to lead early investigators to report that withdrawal bleeding may be produced in the human subject if desired.

Absence from toxic reactions and side effects, reports of symptomatic relief and marked improvement in the sense of general well-being of the patients treated, together with its economy, justify its use generally where estrogenic therapy is indicated.

As in the case of Emmenin, this new elaboration bears the stamp of approval of Dr. J. B. Collip, Director of the research institute of Endocrinology, McGill University, and is marketed by Ayerst, under the trade name

"PREMARIN"

Ayerst, McKenna & Harrison (United States) Limited
Biological and Pharmaceutical Chemists, Rouses Point, N. Y.

BIOCHEMICAL RESEARCH LABORATORIES, Booth 38

The Biochemical Research Laboratories will exhibit a display of vitamin products that are of current interest to the medical profession and will also include current teletype flashes of war and vitamin news.

THE BORDEN COMPANY, Booth 1

Up-to-date information about Borden's scientifically designed infant food at Booth No. 1. BIOLAC, a liquid modified milk, facilitates the preparation of formulas which fully satisfy all nutritional requirements of early infancy except vitamin C. NEW IMPROVED DRYCO, (now spray-dried instead of roller-dried), has increased potencies of vitamins A and D and quicker solubility. It retains the same high-protein, low-fat composition of original Dryco and offers the same unique formula flexibility. MULLSOY, an emulsified food for infants allergic to milk, is exceptionally palatable, readily digestible, and easy to prepare for feeding. It is a liquid preparation of soy bean flour, soy bean oil, water, and added carbohydrate and mineral salts. Other infant foods of special merit include BETA LACTOSE, the improved milk sugar, KLIM, powdered whole milk, MERRELL-SOULE POWDERED MILKS, and BORDEN'S SILVER COW IRRADIATED EVAPORATED MILK.

BURROUGHS WELLCOME & COMPANY (U. S. A. INC.), Booths 3 & 4

BURROUGHS WELLCOME & CO. (U. S. A.) INC., New York, presents a selected group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

CAMEL CIGARETTES, Booths 28 and 29

Camel Cigarettes will exhibit large detailed photographs of equipment used in comparative tests of the five largest-selling brands of cigarettes. These tests proved that Camels burn slower and contain less nicotine in the smoke than other cigarettes. Representatives will be available to discuss this research.

CARNATION COMPANY, Booths 17 and 18

Be sure to visit the Carnation Company exhibit in Booth No. 17 and 18. There you will see displayed an interesting model of the famous Carnation Milk Farms where cattle breeding and feeding experiments are carried on for the purpose of improving the dairy herds supplying the many Carnation evaporating plants. The story of Carnation's program of supervision of raw milk sources and the careful processing of Irradiated Carnation Milk is also told in an interesting manner.

DOHO CHEMICAL CORPORATION, Booth 36

The Auralgan Exhibit consists of a model of the human auricle four feet high, together with a series of twenty-four three dimensional ear drums, modelled under the supervision of outstanding otologists. Each of these drums depict a different pathologic condition based upon actual case observation and prepared, in so far as possible, with strict scientific accuracy so as to be highly instructive and interesting to all physicians.

As the observer looks into the large ear through a proportionately sized speculum, the ear drums appear successively within the canal so as to similate actual conditions seen in life. The successive changes of the ear drums are affected by automatic mechanism, and accompanied by a brief description of the condition.

This is the first time that such a complete modelling of ear drums has ever been executed in this scale.

ELI LILLY AND COMPANY, Booth 15

The Lilly exhibit is evidence of the interest of Eli Lilly and Company in the Illinois State Medical Society. Lilly products both old and new will be on display and Lilly representatives will be present to serve physicians in every possible way.

C. B. FLEET CO. INC., Booth 6

PHOSPHO-SODA (Fleet), a saline laxative, has been presented to the medical profession for over 50 years. This eliminant is suggested when a rapid non-griping action is desired. It is recommended in gall bladder disorders.

The profession is cordially invited to visit the booth of the C. B. Fleet Company, Inc.

GENERAL ELECTRIC X-RAY CORPORATION, Booth 47

For Illinois physicians there are 23 trained sales and servicemen in G-E branch offices and regional service depots located in Chicago, Springfield, and St. Louis, ready to carry out the long-established company policy that service — technical or mechanical — must be maintained throughout the life of any G-E apparatus.

X-ray equipment, electromedical equipment, the electrocardiograph, and accessory items, being technical in design and operation, require a trained organization of field men to sell intelligently, install properly, and help the user throughout the life of the G-E apparatus. For this important reason we want you to know the G-E man in your locality. Won't you visit our exhibit booth and get acquainted?

GERBER PRODUCTS COMPANY, Booth 12

The complete line of Gerber Foods will be on display — two dry, precooked cereals (one a wheat cereal, the other an Oatmeal which is wheat-free) 18 Strained Foods and 10 Junior or Chopped Foods. Booklets available for distribution to mothers or to patients on special diets, as well as the professional literature, all of which will be sent to registrants.

H. J. HEINZ COMPANY, Booth 14

The Heinz exhibit featuring Strained and Junior Foods merits your thoughtful attention if you prescribe for infant feeding or adults on soft diets.

The popular Nutritional Charts have something new added — a section on the "Application of the Science of Nutrition to Dietetics." While you're at the exhibit, register for the 10th edition.

The Heinz representatives will be glad to be of service.

HORLICK'S MALTED MILK CORPORATION, Booth 39

You are cordially invited to visit the Horlick Booth (Number 39), and enjoy a refreshing serving of chocolate malted milk.

This palatable, delicious and easily digested food-drink is often indicated when the doctor prescribes a liquid or

semi-liquid diet. It is basic nutrition because it is a scientifically well balanced combination of proteins and carbohydrates of full cream milk and choice grains.

The attendants at the booth will be willing and glad to answer any inquiries and explain the qualities of our new vitamin fortified product.

THE KELLEY-KOETT MFG. CO., INC., Booths 42 and 43

One of the most important X-ray advances of many years, The Multicron Control, will be demonstrated at Booths Nos. 42 and 43 by The Kelley-Koett Manufacturing Company, Inc. of Covington, Kentucky. The Multicron is incorporated in the Keleket W-3-100 Combination Unit and is designed to take care of troublesome details automatically, leaving the doctor free to concentrate on the important factors of technique. It also assures work of uniformly high quality.

The W-3-100 is a complete Combination Unit with Generator, Tube Stand and Table. It permits Radiography and Fluoroscopy at all angles from Trendelenberg to vertical. It is equipped with Bucky Diaphragm, motor tilt table, stereoscopic shift, etc.

The Keleket Booths will be under the direction of Mr. G. E. Geise, Vice President. Don't fail to see it.

KELLOGG COMPANY, Booth 2

Kellogg's ready-to-eat cereals have an important part in the national nutrition program. Pep (whole wheat flakes with added bran) has been enriched with vitamins B and D, the vitamins so frequently lacking in the average American diet. Kellogg's other whole wheat and bran cereals — Wheat Krispies, Krumbles, Shredded Wheat, All-Bran and Bran Flakes — are rich in minerals and vitamin B too. Ask for your set of medical reprints covering recent research with bran. Corn Flakes and Rice Krispies are included freely in wheat-free and low residue diets.

Diet Lists, 100 Calorie Portion Chart, Vitamin Chart and Wheat Allergy folder available at the Kellogg booth.

LEDERLE LABORATORIES, Booth 52

Lederle Laboratories will again exhibit with the Illinois State Medical Society.

It is our pleasure to invite the members and visiting professional men to visit our booth where we will be pleased to discuss with them any of our outstanding products in either the biological or pharmaceutical field. Complete information of the various Sulfonamide products will be available.

M & R DIETETIC LABORATORIES, INC., Booth 27

M & R Dietetic Laboratories, Inc., booth number 27, will display Similac, a food for infants deprived partially or entirely of breast milk; also powdered SofKurd. Representatives will appreciate the opportunity to discuss the merit and suggested application of these products.

A. E. MALLARD, Booth 44

A. E. Mallard of Detroit, Michigan, manufacturing chemists for 31 years, will have a display on Lumajel with Mineral Oil, plus a few other of their well known items.

The meeting will be attended by Dan L. Hovis, Ed A. Wherry, and Curtis H. Hayes.

MERCK & CO. INC., Booth 20

War medicine and public health requirements have focused particular attention on the antibacterial properties of the sulfonamides, the nutritional value of the vitamins, and the antisyphilitic value of the arsphenamines and Tryparsamide.

Physicians who have need for a rapidly acting anesthetic for short operative procedures will appreciate the convenience of Vinethene for home, office, or emergency use.

Chronic ulcers, Raynaud's disease, scleroderma, and vasospastic conditions of the extremities may be benefited by the use of Mecholyl Chloride administered by ion transfer. Subcutaneous injection of Mecholyl Chloride may be employed for controlling attacks of suricular paroxysmal tachycardia.

Pyridium is established as an outstanding preparation for prompt symptomatic relief in urogenital infections.

Literature on all of these important products is available at the Merck booth, where Mr. S. A. Gaffney will be in charge.

MEAD JOHNSON & COMPANY, Booth 16

"Servamus Fidem" means We Are Keeping the Faith. Almost every physician thinks of Mead Johnson & Company as the maker of Dextri-Maltose, Pablum, Oleum Percomorphum and other infant diet materials, but not all physicians are aware of the many helpful services this progressive company offers physicians. A visit to Booth No. 16 will be time well spent.

MEDICAL PROTECTIVE COMPANY, Booth 60

The Professional Liability risk of the doctor cannot be given an underwriting classification with any other type or types of insurable hazards, without disadvantage to the doctor. The circumstances out of which arise the reciprocal rights and duties of a doctor and his patient are peculiar to their relationship; the interest of the doctor in the management and disposal of charges of negligence against him is not to be compared to that of any other class of damage suit defendants. The most exacting requirements of adequate liability protection are those of the Professional Liability field.

The Medical Protective Company is exclusively engaged in that field.

Our representatives, thoroughly trained in Professional Liability underwriting, invite you to confer with them at exhibit booth No. 60.

MELLIN'S FOOD, Booth 25

Physicians are cordially invited to call and make inquiries regarding details of composition and application of Mellin's Food. During the 75 years of its existence Mellin's Food has so well established itself as to be worthy of consideration in any attempt to arrange nourishment for infants, children and adults.

WM. S. MERRELL COMPANY, Booth 80

Among the new pharmaceutical developments to be featured at the Merrell exhibit are a combination of Nitranitol (brand of mannitol hexanitrate) with Phenobarbital, for the palliative treatment of essential hypertension, and a new anesthetic and antiseptic suppository, Diothoid, for relief of pain in hemorrhoids and other anorectal conditions.

Members and guests of the Society are cordially invited to visit the Merrell booth for a discussion of these and other distinctive therapeutic specialties.

C. V. MOSBY COMPANY, Booth 5

The C. V. Mosby Company extends to convention visitors a cordial invitation to visit Booth No. 5.

Among the new books to be displayed are Kilduffe-DeBakey "The Blood Bank and the Technique and Therapeutic of Transfusions," Dieckmann "The Toxemias of Pregnancy," Blair "Cancer of the Face and Mouth," Thewlis "The Care of the Aged," Willius "Mayo Cardiac Clinics," Top "Handbook of Communicable Diseases," Tassmann "Eye Manifestations of Internal Diseases," Mettler "Neuroanatomy" and Alexander "Synopsis of Allergy." New editions will include Crossen & Crossen "Diseases of Women," Porter-Carter "Management of the Sick Infant and Child," Marriott-Jeans "Infant Nutrition," Hermann "Synopsis of Diseases of the Heart and Arteries," and Dodson "Synopsis of Genitourinary Diseases."

V. MUELLER & COMPANY, Booth 55

Despite the demands of our unprecedented offense effort, priority restrictions and shortages in materials, the exhibit of V. Mueller & Company (Chicago) will include several new developments in fine surgical instruments and equipment. A representative selection of the complete line will also be shown. The display will be in charge of Mueller Representatives, F. M. Harmer and Chester I. Lovested.

NUTRITION RESEARCH LABORATORIES, Booth 35

This exhibit shows by means of x-rays, transparent photographs, and wax models, the important types of chronic arthritis. The beneficial effects producted by Ertron in rheumatoid, osteoarthritis, and gout, are described in scientific publications which are available for free distribution.

The therapeutic advantages of Bezon, a whole natural vitamin B complex, are also depicted.

Pendron will be introduced to the profession at this meeting. Because the army recruiting stations and governmental agencies have found that human deficiencies are very common and multiple in nature, the availability of Pendron, which contains all of these vitamins in adequate amounts, is of vital interest at this time in preventing and combating the cause of so much disability.

PARKE, DAVIS & COMPANY, Booth 54

Featured in the Parke-Davis Exhibit will be the sex hormones, Theelin and Theelol; antisyphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various Adrenalin Chloride Preparations.

PET MILK COMPANY, Booths 21 and 22

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Milk Company in Booths No. 21 and No. 22. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk Booth.

PETROGALAR LABORATORIES, INC., Booth 7

This year Booth No. 7 will be occupied by Petrogalar Laboratories, Inc. who offer, in addition to samples of the Five Types of Petrogalar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrogalar representatives to show you the HABIT TIME booklet. It is a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & CO., LTD., INC., Booth 13

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

W. B. SAUNDERS COMPANY, Booth 11

This publishing house will exhibit a great number of new books and new editions that will be of unusual importance at this time to those attending the 1942 Meeting. They will include the first of the Official Military Surgical Manuals dealing with Maxillofacial Surgery, Duncan's "Metabolic Diseases," Johnstone's "Occupational Diseases," Steinbrocker's "Arthritis," a new Beckman's "Treatment," a new Christopher's "General Surgery," the "Surgical Practice of the Lahey Clinic," Walters, Gray & Priestley's "Gastric Carcinoma," advance sheets of Lundy's "Anesthesia," and the 1942 Mayo Clinic Volume.

SHARP & DOHME, Booth 24

Sharp & Dohme will have their new modern display at Booth No. 24 this year, featuring 'Delvinal' Sodium, 'Lyovac' Normal Human Plasma, 'Lyovac' Bee Venom Solution, and other 'Lyovac' biologicals. There will also be on display a group of biological and pharmaceutical specialties prepared by this house, such as 'Propadrine' Hydrochloride products, 'Rabellon,' 'Padrophyll,' 'Riona,' 'Depropanex,' and 'Ribothiron.' Capable, well-informed representatives will be on hand to welcome all visitors and furnish information on Sharp & Dohme products.

SMITH, KLINE AND FRENCH LABORATORIES, Booth 19

We again welcome the opportunity of displaying our products, including Benzedrine Inhaler, Benzedrine Sulfate Tablets, Paredrine Aqueous and Pentnucleotide, to the members of the Society. Our representative will be only too glad to discuss the products exhibited and will endeavor to answer any questions that may arise concerning them.

E. R. SQUIBB & SONS, Booth 26

E. R. Squibb & Sons, located in Booth 26, will endeavor to convey scientific and pertinent information about some of their most important products by striking visual methods. Numerous photographs, charts, and demonstration packages will graphically point up the important features of these products, among which will be included new additions to their Vitamin, Glandular and Specialties lines.

Well informed representatives will be on hand, moreover, to welcome visitors and to furnish further information on the products displayed.

FREDERICK STEARNS & COMPANY, Booth 46

Doctors are cordially invited to visit our attractive convention booth to view and discuss outstanding contributions to medical science developed in the Scientific Laboratories of Frederick Stearns & Company.

Our professional representatives will be please to supply all possible information on the use of such outstanding products as Neo-Synephrin Hydrochloride for intranasal use, Mucilose for bulk and lubrication, Ferrous Gluconate, Potassium Gluconate, Gastric Mucin, Susto, Trimax, Appella Apple Powder, Nebulator with Nebulin A, and our complete line of Vitamin products.

SUTLIFF & CASE CO., INC., Booth 24

Sutliff & Case Co., Inc., of Peoria, Illinois will have on display the original Thiocyanate Pharmaceuticals for judicious Thiocyanate Therapy in the treatment of Arterial Hypertension. The display will include:

Thio-Cara, an aromatic liquid preparation containing a therapeutic dose of potassium thiocyanate; it also contains aromaticized cascara to induce elimination — so often essential in treating arterial hypertension.

Thiocyan Tabs, a calcium derivative of the thiocyanate, specially coated.

Potassium Thiocyanate Tablets, 1½ grain and 3-grain specially coated.

The Blood Thiocyanate Test Kit — for the estimation of the Thiocyanate (Sulfocyanate) level of the blood. A practical modification of Barkets* method.

*Journal A. M. A., 106 (March 7th, 1936), 726

These worthy Thiocyanate preparations have been supplied to the medical profession over a period of many years with numerous gratifying results reported.

WHITE LABORATORIES, INC., Booth 33

White's Cod Liver Oil Concentrate will be presented in Booth 33, for your consideration. Here you may obtain complete information concerning the entire field of cod liver oil concentration, with clinical data substantiating the efficacy of White's Liquid, Tablet and Capsule Concentrates.

Qualified representatives and descriptive literature, including reprints and excerpts from medical literature, will further direct attention to the contribution of White Laboratories in the Vitamin A and D Field.

White Laboratories holds an established place as one of the world's most extensive users of cod liver oil for pharmaceutical purposes and is the world's largest manufacturer of cod liver oil concentrates.

All physicians are cordially invited to visit the booth.

WINTHROP CHEMICAL COMPANY, INC., Booth 32

The Winthrop Chemical Company, Inc. extends a cordial invitation to visit booth 32, where representatives will gladly discuss the latest contributions made by this firm to the medical profession.

JOHN WYETH & BROTHER, Booth 10

You are cordially invited to visit Booth No. 10 where John Wyeth & Brother will exhibit its HEMO-GUIDE — an aid to hematologic diagnosis. Copies of the HEMO-GUIDE will be available for doctors who wish them, and our representatives will be happy to show how it assists in diagnosing types of anemia.

Among the specialties to be displayed will be —

AMPHOJEL — Wyeth's Alumina Gel for the management of peptic ulcer.

BEPRON — Wyeth's Beef Liver with Iron for the nutritional anemias.

B-PLEX ELIXIR — For the administration of the complete vitamin B complex.

BEWON ELIXIR — The palatable appetite stimulant.

KAOMAGMA — For the control of diarrhea regardless of etiology of the condition.

ILLINOIS STATE MEDICAL SOCIETY
102nd Annual Meeting
Springfield, Illinois
May 19, 20, 21, 1942

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(One elected each year to serve three years.)

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(One elected each year to serve three years.)

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*Deceased.

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Director, Department of Public Welfare
Ralph P. Pearis, Councilor
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To be announced following annual meeting.

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Springfield, May 19, 20, 21, 1942

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Program For Convention
of
Woman's Auxiliary to the Illinois State Medical Society
SPRINGFIELD, ILLINOIS
MAY 19, 20, 21, 1942

LELAND HOTEL

TUESDAY, MAY 19, 1942

9:00 A.M. Registration.
10:00 A.M. Pre-Convention Board Meeting.
1:30 P.M. Invocation — Rev. A. E. Martin, Galva.
Welcome — Mrs. A. T. Kwedar, Springfield.
Response — Mrs. C. C. Kane, East St. Louis.
Business Meeting — conducted by Mrs. Harry Otten, President, Woman's Auxiliary, Springfield.

3:00 P.M. Address — E. H. Weld, President Elect, Illinois State Medical Society, Rockford.

3:30 P.M. Tribute to Lincoln — Lincoln's Tomb.
Mrs. Harold M. Camp, officiating, Monmouth.

7:00 P.M. Dinner — Banquet Room, Leland Hotel.
Mrs. Wm. J. Morginson, Chairman, Springfield.
Mrs. John Wyness and Mrs. Thomas Masters, Co-chairmen for Fashion Show, Springfield.

WEDNESDAY, MAY 20, 1942

9:00 A.M. Memorial Service — conducted by Mrs. H. B. Henkel, Springfield.

9:20 A.M. General Meeting.

11:00 A.M.. Presentation of Problems of a Present Day Medical Auxiliary — conducted by Mrs. S. R. Magill, Springfield.

12:00 A.M. Announcements — Mrs. D. H. Trumpe, Convention Chairman, Springfield.

12:30 P.M. President's Luncheon — Leland Hotel. Mrs. J. C. Jackman, Chairman, Springfield.

Address — Col. Paul G. Armstrong, Director, Selective Service System, State of Illinois, Springfield.

2:30 P.M. Post Convention Board Meeting — Mrs. W. J. Wanninger, Presiding, Chicago.

4:00 P.M. Tea — at the Governor's Mansion.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 19, 1942

3:00 P.M. Address — E. H. Weld, President-Elect, Illinois State Medical Society.
3:30 P.M. Tribute to Abraham Lincoln.
Lincoln Memorial
Lincoln's Home
7:00 P.M. Dinner — Leland Hotel
Fashion Show
Group of Piano Numbers — Adele Tilson.

WEDNESDAY, MAY 20, 1942

12:30 P.M. President's Luncheon — Leland Hotel
Mrs. J. C. Jackman, Chairman.
Address — Col. Paul G. Armstrong, Director, Selective Service System, State of Illinois, Springfield.
5:30 P.M. Tea — at the Governor's Mansion.

Original Articles

THE SIGNIFICANCE OF THE NEGRI BODY IN THE DIAGNOSIS AND EPIDEMIOLOGY OF RABIES*

HARALD N. JOHNSON, M.D.
MONTGOMERY, ALABAMA

It is a well-known fact that Negri bodies cannot always be found in man and animals dying of rabies. Therefore, if the microscopic examination of a brain specimen is negative it is necessary to resort to animal inoculation in order to establish the diagnosis. I wish to discuss these two methods of diagnosis and to present a summary of the results obtained at this laboratory in an extensive study of brain specimens from naturally and experimentally infected animals.

Since Adelchi Negri (1903)[3] first described the intracytoplasmic inclusion bodies which bear his name, there have been many studies concerning the frequency and significance of their occurrence and the best method for the demonstration of these bodies. Negri-Luzzani (1913)[3] reported the result of the microscopic examination and animal inoculation of 4961 brain specimens. Of those specimens positive by animal inoculation, 6.7 per cent were microscopically negative. Joseph Koch and Gertrud Jahn[3] published a similar survey of specimens received at the Robert Koch Institute 1913 to 1928. The pertinent data are summarized in Table I. A total of 4682 specimens were found positive for rabies by animal inoculation and of these, 11.8 per cent were negative by microscopic examination. Koch had similar data on 53 human cases of rabies and in this group 70 per cent wert Negri negative. In one of his experiments Koch inoculated 20 dogs intramuscularly with street virus and all succumbed to rabies. Nineteen of the animals developed the paralytic form of the disease and only four

TABLE I

Summary of Microscopic and Animal Inoculation Studies of Routine Brain Specimens Received at the Robert Koch Institute 1913 to 1928

Year	Total Specimens	Negri +	Negri 0 Animal +	Negri 0 Animal 0	Per cent of Total + found Negri 0
1913	215	58	17	137	22.7
1914	120	37	7	68	15.9
1915	452	253	48	140	15.9
1916	538	283	21	226	6.9
1917	407	241	23	134	8.7
1918	405	233	28	132	10.7
1919	480	250	64	143	20.4
1920	355	123	45	170	26.8
1921	506	226	45	223	16.6
1922	706	373	58	258	13.4
1923	1514	949	72	448	7.1
1924	1700	868	73	733	7.7
1925	477	137	36	299	20.8
1926	283	72	14	193	16.2
1927	113	15	3	95	16.6
1928	95	7	3	85	30.0
Total	8366	4125	557	3484	11.8

Note: It will be noted that columns 3, 4, and 5 do not add up to equal the number in column 2. Some of the Negri negative specimens were evidently unsatisfactory for animal inoculation due to decomposition and bacterial contamination.

*The studies and observations herein reported were conducted with the support and under the auspices of the International Health Division of The Rockefeller Foundation, the Georgia State Board of Health, and the Alabama State Board of Health.

Presented before the Section of Public Health Hygiene, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 20, 1941.

of these were Negri positive. One dog exhibited the furious form of the disease and in this instance numerous Negri bodies were demonstrated. Gerlach and Schweinburg[4] could not substantiate this high incidence of the Negri negative state in experimental rabies. These authors, however, noted that dogs dying of the paralytic form of rabies were often Negri negative while those with furious rabies were generally positive. They also stated that animals killed during the early stages of the disease were apt to be microscopically negative and therefore the suspected animals should be held until death. They concur with Koch that human brain specimens are often Negri negative.

Of 39 human cases of rabies occurring in this country where the records were published or made available to us by hospitals or state laboratories and where animal inoculation was performed, 31 per cent were microscopically negative.

In the absence of Negri bodies, when it is important to be certain of the diagnosis of rabies the inoculation of some laboratory animal is necessary. In the past the guinea pig and rabbit have been considered the most suitable test animals for this purpose. Since the demonstration by Hoyt and Jungeblut[1] that the intracerebral injection of rabies virus into white mice produced a typical and constant infection and the application of this method for diagnosis by Webster and Dawson[8] and Leach,[5] the white mouse has become increasingly popular as a test animal.

The only comparative study of the guinea pig and mouse inoculation methods we have found in the literature is that of Sulkin and Willett.[7] They report the results of microscopic examination and guinea pig inoculation of specimens received at the St. Louis Division Laboratories from 1921 to 1938. Of a total of 1038 specimens proven positive by guinea pig inoculation, 4 per cent were either microscopically negative or questionable. In their comparative test of the susceptibility of white mice and guinea pigs to rabies virus when inoculated intracerebrally, of a total of 25 specimens reported mouse positive, four were negative by guinea pig inoculation. Three guinea pigs and four mice were inoculated with material from each specimen. The mice received an inoculum of 0.03 cc and the guinea pigs 0.1 cc of the brain suspension. This is too small a group to have any statistical significance but it does indicate that occasional positive specimens will be missed by guinea pig inoculation.

Materials and Methods — The material for this study is primarily from dogs as this animal is the principal natural host for rabies in this region and large numbers of brain specimens are obtainable. A group of specimens obtained during an epizootic of fox rabies is also included.

The field specimens were obtained from the State Laboratories of Georgia and Alabama. During 1937 all brain specimens received by the Georgia State Health Department which were reported microscopically negative were tested for the presence of rabies virus by mouse inoculation. This study was carried on jointly by the Alabama Rabies Laboratory and the Georgia State Health Department. During January and February all the specimens were sent to this laboratory. From March through October the study was run in parallel at both laboratories and in November and December only at the Georgia State Health Department. The findings are analyzed to determine the expected percentage of positive specimens which would be missed if the microscopic examination was the only diagnostic method. An epizootic of fox rabies began in June 1940 in Burke and Jefferson counties of Georgia. As this was an ideal opportunity to study the course of a rabies epizootic all fox specimens obtained were forwarded to this laboratory for mouse inoculation, whether they were positive or negative. As a part of the rabies control program instituted by county, state, and federal agencies a considerable number of foxes were killed by hunting and trapping. These specimens were also included in the study.

During the period 1938 and 1939 all brain specimens received at the Alabama State Health Department which were from dogs that had been vaccinated, were studied by both microscopic and animal inoculation methods. This was done to get an indication of the number of vaccine failures but it is also of interest to compare this group with the Georgia specimens as it has been stated in the literature that vaccinated dogs dying of rabies are apt to be Negri negative.

In the course of experiments carried on at this laboratory concerning the efficacy of commercial canine rabies vaccines, 188 dogs have died of rabies. Of these, 62 animals had been vaccinated and 126 were controls. The test inoculum consisted of 1:10 water suspension of the brain of a dog dying of furious rabies after natural exposure. After trituration and centrifugation 0.5 cc of this material was injected into each masseter muscle. The dogs developing rabies were allowed to die of the disease and in those instances where the microscopic examination was negative, confirmatory mouse inoculation was performed.

The routine method for microscopic diagnosis of dog brains was to prepare impressions from a cross section of the Ammon's horn and to stain these with Sellers' carbol fuchsin-methylene blue stain.[6] Mouse brains were examined the same way except that the impression was from the cross section of the whole brain taken in the Ammon's horn area. A variety of staining techniques with both fresh preparations and paraffin sections have been performed in parallel with the routine procedure.

TABLE II

Summary of Microscopic and Mouse Inoculation Studies of Routine Brain Specimens Received at the Georgia State Health Department
1937

Month	Negri +	Negri 0	Negri 0 Mouse +	Total +	Per cent of total positive found Negri 0
January	62	37	5	67	7.5
February	50	38	1	51	2.0
March	67	48	13	80	16.2
April	76	48	6	82	7.3
May	77	93	7	84	8.3
June	58	76	9	67	13.4
July	73	68	8	81	9.9
August	39	63	11	50	22.0
September	48	39	4	52	7.7
October	45	35	6	51	11.8
November	53	45	7	60	11.7
December	42	33	4	46	8.7
Total	690	623	81	771	10.5

The brain material for mouse inoculation was ground in a mortar using alundum as an abrasive and then diluted with distilled water to make a 1:10 suspension. After centrifugation 0.03 cc of the supernatant fluid was injected intracerebrally into each of four white mice. Mice developing symptoms of rabies were studied by microscopic examination as previously described.

Observations — The data obtained in the study of the Georgia specimens for 1937 are summarized in Table II. The number of brain specimens found positive by microscopic examination and the number of Negri negative specimens found positive by mouse inoculation is given for each month. A total of 236 microscopically positive specimens were also tested by mouse inoculation and as these were all positive no more were inoculated. The average percentage of positive specimens missed by microscopic examination for the year was 10.5 per cent.

A total of 404 fox brains have been studied at this laboratory. Of these, 137 were positive for rabies by mouse inoculation. An analysis of the mouse positive specimens where a satisfactory microscopic examination was possible reveals that 9.4 per cent were Negri negative. Table III shows the number and source of the Negri negative, mouse positive fox specimens. It is interesting to see that all the Negri negative, mouse positive specimens came from the two counties

TABLE III

Summary of Microscopic and Mouse Inoculation Studies of Brain Specimens Obtained During an Epizootic of Fox Rabies in Georgia
1940-1941

Month	County	Negri +	Negri 0 Mouse +	Total +	Per cent of total + found Negri 0 Burke County
July	Burke	3	0	3	0.0
August	Burke	20	7	27	25.9
	Jefferson	6	0	6	
	Other	2	0	2	
September	Burke	11	1	12	8.3
	Jefferson	1	0	1	
	Other	4	0	4	
October	Burke	9	1	10	10.0
	Jefferson	2	0	2	
	Other	2	0	2	
November	Burke	9	0	9	0.0
	Jefferson	5	1	6	
	Other	5	0	5	
December	Burke	5	0	5	0.0
	Jefferson	4	2	6	
	Other	7	0	7	
January	Burke	1	0	1	0.0
	Jefferson	3	0	3	
	Other	8	0	8	
February	Other	5	0	5	
March	Other	4	0	4	

where the epizootic first appeared and most of them occurred at the height of the epizootic. The 37 positive specimens obtained from 15 counties other than Burke and Jefferson were all Negri positive.

An analysis of 92 mouse positive specimens from vaccinated dogs dying of rabies in Alabama during 1938 and 1939 shows that 14 per cent were Negri negative. Of these 92 specimens, 46 were known to have exposed humans or domestic animals by biting and a lesser number by contact with saliva. Full vaccination data were noted in all these cases, such as the name of the firm supplying the vaccine and dosage administered. Furthermore, all the cases included were from dogs vaccinated at least one month and not more than one year before the onset of rabies symptoms.

Of 188 dogs dying of rabies during the course of experiments on canine vaccination, 39.7 per cent were Negri negative. The incidence of the Negri negative state was 38.7 per cent in the vaccine group and 39.7 per cent in the control group. The average incubation period and duration of symptoms before death in the vaccinated and control groups was exactly the same; that is, 21.1 days and 2.5 days. A few of the experimental animals died without any evident premonitary symptoms, exitus often occurring during a convulsive seizure. Of 182 dogs that lived one or more days, 46 per cent were vicious at some time during the course of the disease. The percentage of Negri negatives in this group was 21.4 as compared with 52 per cent for the dogs with paralytic rabies. The dogs developing the furious form of the disease lived an average of two days longer than those with paralytic rabies. The average duration of symptoms for the Negri positive dogs was 3.3 days as compared with 1.2 days for the Negri negative group. In the Negri positive group the longest duration of life after the onset of symptoms was 10.5 days. In the Negri negative group the longest duration of symptoms was three days. It must be noted that there is no sharp line of demarcation between furious and paralytic rabies. In our classification any dog that was vicious at any time during the course of the disease was said to have furious rabies. All gradations are encountered from extreme violence, without any noticeable muscular paralysis, to rapid general muscular paralysis without any suggestion of viciousness.

An interesting finding derived from the inoculation experiments is that the percentage of Negri negatives varied with different brains used for test inoculation. As these brains were obtained over a period of two years this may indicate a variation in the virulence of the virus. Table IV gives the number of dogs dying of rabies, the microscopic report, and the morbidity in per cent following inoculation with different strains of test virus. The morbidity figures are about the same for the various test brains but that probably represents only the average susceptibility of the dog to rabies. The mortality was 100 per cent throughout. In the group of 19 dogs dying of rabies following inoculation with test brain number 45 only four were classified as furious rabies. The average duration of disease symptoms was slightly more than 24 hours and the maximum was two days.

TABLE IV

Summary of the Microscopic Examinations of the Brains of Dogs Dying of Rabies after Experimental Infection with Different Strains of Street Virus

Brain	Date Obtained	Number of Dogs	Negri +	Negri 0	Per cent Negri 0	Morbidity Per cent
30	March 1939	19	16	3	16	67
35	June 1939	41	31	10	24	52
39	November 1939	46	33	13	28	64
45	April 1940	19	0	19	100	58
54	October 1940	28	14	14	50	65

DISCUSSION

An analysis of previous reports and of our own experimental data indicates that in routine microscopic examination of brain specimens about 10 per cent of the total positive cases will be missed.

There appears to be a considerable discrepancy between the results of the field survey and that of our experimental studies. Two reasons for this are apparent. The first and most significant is that the specimens submitted to diagnostic laboratories are usually from dogs that have exposed man by bite or contact and our findings show that the dog with furious rabies is apt to be Negri positive. The dog with para-

lytic rabies is prone to hide from his master and in nature they often run away and die in seclusion, a habit of dogs affected with other diseases as well. If the animal does remain at home and dies of rabies without becoming vicious most people will not bother to submit the head to a diagnostic laboratory. The second factor is the dosage of virus which in our experiments was large.

It is evident that the duration of symptoms before death has a definite correlation with the absence or abundance of Negri bodies. This substantiates the widely accepted procedure of holding a suspected animal until death rather than killing the suspect.

In Table I it can be seen that the percentage of Negri negative, animal positive specimens varied from year to year. The Georgia specimens for 1937 showed a similar variation from month to month. The data obtained in the fox epizootic and with experimental infection following the use of different test brains suggest that a change may occur in street virus during periods of increasing or decreasing prevalence, either in virulence or manner and site of multiplication. In Alabama and Georgia although canine rabies remains enzootic in certain areas, the majority of cases are from new foci. Excluding the industrial and highly populated areas where the disease remains more constant the local enzootics move about from county to county. Table V is included to illustrate the

TABLE V

Local Rabies Epizootic
Ware County Georgia
1938

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Positive Specimens	0	0	2	2	5	2	1	1	0	0	0	1

Note: No positive specimens reported in 1939 from this County.

local epizootic of rabies. There were only a few specimens submitted from Ware County in 1938 but the results give an indication of the local ascent and regression of rabies when no new control procedures are used. It is evident that these positive cases are only a portion of the total number that occurred.

There does not seem to be a regular periodic cycle of increased incidence of rabies but every few years there is a considerable increase in the general prevalence of the disease. This variation may lead to erroneous conclusions regarding the value of certain control precedures such as compulsory vaccination, and other sanitary procedures.

Schweinburg[4] states that strains of virus are in rare instances encountered which consistently fail to produce Negri bodies and it is well known that rapid serial intracerebral passage of street virus in mice or rabbits leads to the disappearance of the typical Negri bodies. In mice this usually occurs after 20 to 50 passages and at this time a maximum virus titer is obtained. In the dog rabies which prevails in one portion of Africa and is caalled "oulu fato," Negri bodies are rarely demonstrated, but if test animals of another species are inoculated Negri bodies are produced. In the region just mentioned the dogs almost invariably develop the paralytic form of the disease and rabies in man is extremely uncommon. The variation in virulence of rabies virus for different species is well illustrated by the Trinidad and Brazilian strain of rabies which is carried by the vampire bat and though very pathogenic for cattle it is not very pathogenic for the dog.

Although a large number of foxes were found dead in Burke and Jefferson Counties only one of these was sent in for examination. It is probable that a considerable number of animals died in seclusion and were not found and these would probably fall in the paralytic group.

One reason for the high incidence of Negri negative findings in human rabies may be that all the clinical types of the disease are available for study, and it is interesting to note that the per cent of Negri negative cases is approximately the same in the human and experimentally infected dog groups.

It does not seem probable that a significant number of Negri positive specimens are missed by the rapid microscopic staining method of Sellers. A large number of Negri negative specimens have been studied in parallel by the paraffin section method and a variety of special staining techniques have been employed. Though

small inclusion bodies are more clearly defined in the paraffin section method the diagnosis has been the same with the two methods.

In the dogs dying of rabies after experimental inoculation the Ammon's horn is the most satisfactory area for the demonstration of Negri bodies. Though the cerebellum is a good area for the demonstration of Negri bodies in paraffin sections it is difficult to get good smear and impression preparations. Other than the Ammon's horn the thalamus and cerebral cortex are the most satisfactory areas for the demonstration of Negri bodies. Dogs with furious rabies are more apt to have Negri bodies in the cerebral cortex than those with paralytic rabies but that also holds true for the other areas as well. In smear and impression preparations it is wise to do several preparations because one may be negative as Negri bodies tend to be unevenly distributed.

It is hardly practicable to inoculate all Negri negative brain specimens. In general, confirmatory animal inoculation should be performed when a human being has been exposed and when:

1. The brain in question is from an animal diagnosed as clinically rabid by a veterinarian or other competent observer.
2. Atypical inclusion bodies are found.
3. The animal was killed or died with a history suggestive of rabies.
4. The biting animal was a stray and was immediately killed.

The practical importance of the animal test is that the Pasteur treatment is usually begun immediately if the exposure case falls in the above categories. If mouse inoculation is performed and the animals remain normal for 10 days and one of them has been sacrificed and found Negri negative, treatment may be discontinued. It is also reassuring for the patient to know if the biting animal definitely did not have rabies.

In regard to the use of the white mouse as a laboratory test animal for the diagnosis of rabies, we have found that all of several varieties of these animals obtained from commercial and other sources have been equally satisfactory for this purpose.[2]

SUMMARY

All brain specimens received at the Georgia State Health Department in 1937 for the diagnosis of rabies were examined microscopically at that laboratory and those found negative were studied by mouse inoculation. Seven hundred and seventy-one specimens were found positive for rabies and of these 10.5 per cent were Negri negative. In the course of an epizootic of fox rabies, 137 brain specimens were positive for rabies by mouse inoculation and 9.4 per cent of these were microscopically negative.

An analysis of 92 mouse positive brain specimens obtained in Alabama during 1938-1939 from dogs that had been vaccinated one month to one year before the onset of rabies demonstrated that 14 per cent were Negri negative.

When dogs were experimentally infected with rabies by intramuscular inoculation, 39.7 per cent of the animals were negative by microscopic examination. Forty-six per cent of the dogs developing rabies were vicious at some time during the course of the disease. Only 21.4 per cent of these were Negri negative as compared with 52 per cent for the dogs with paralytic rabies.

This partially explains the discrepancy between the Negri findings in natural and experimental rabies as the majority of routine specimens are from vicious and biting dogs.

The duration of symptoms before death has a definite correlation with absence or abundance of Negri bodies.

Vaccinated dogs dying of rabies exhibited the same clinical course as unvaccinated controls and the error in microscopic diagnosis was approximately the same in the two groups.

Our studies suggest that rabies street virus is altered in either virulence or manner and site of multiplication during epizootics of the disease and at this time a higher proportion of the infected animals will be Negri negative.

The rapid microscopic diagnosis method of Sellers is recommended. The indications for animal inoculation of brain specimens are enumerated and the white mouse is recommended for this purpose.

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DISCUSSION

Dr. H. J. Shaughnessy, Chicago: I know the time is getting late and I will make this as brief as possible. I would like to say that I think those of us in Illinois should be particularly interested in Dr. Johnson's paper because, much as I dislike to say so, we have as much rabies in this state as any state in the union.

The significance of Negri bodies, as a matter of fact the nature of these structures, is still in dispute. They have been considered to be protozoal in nature, to be colonies of virus, or degeneration products of host cells. It is now pretty generally believed that they are not protozoa, but we do not know if either of the latter two theories hold water. There is some evidence for both.

At any rate, we do know this much, which is of great importance, i.e., it has been shown that different forms of rabies differ in their powers to produce Negri bodies. Those that do not readily produce Negri bodies become fixed in virulence most quickly and stop producing Negri bodies entirely in a short while.

Whether true Negri bodies with typical internal structure can be produced by agents other than rabies virus is also still a question. Dr. Johnson has shown that lyssa-like bodies can be found in normal cats and mice. It has been claimed that the injection of various substances such as viper venom and B. pyocyaneus produce lyssa-like bodies. This work has not been restudied recently, to my knowledge. I doubt whether bodies of this type will be mistaken for Negri bodies by experienced workers.

Regardless of these findings I think it is usually believed that whenever Negri bodies are found in the brains of dogs or other animals it is good evidence of the presence of rabies. Dr. Johnson has shown that practically every animal that shows true Negri bodies can be found by animal inoculation to have virus in its brain. That has been shown by a number of investigations. On the other hand, there has been evidence from a number of studies that rabid animals may not show evidence of Negri bodies even though the virus is present. Very little could be done about this situation until a few years ago. Rabies in rabbits and guinea pigs has such a long incubation period that the practical value of inoculating them was very slight. The demonstration by Hoyt, Webster, and Leach that rabies in mice has a shorter incubation period provided laboratories with an important supplementary method.

In our limited experience the results of mouse inoculation have been about what would be expected from the presentation made here today. In other words, the heads which show Negri bodies always give positive results in mice. About 10 to 15 per cent of the specimens which show no Negri bodies also show positive results in mice. From this experience we have decided to use the test only in cases where no Negri bodies have been found and where there is some evidence that the person has been exposed to infection by the animal in question. So many times animal heads are submitted out of curiosity. In other cases the heads of animals are submitted under conditions where the principal point of issue is whether the owners of the animal are going to recover from the dog tax fund or not. We feel that is primarily a problem of economics and not of public health.

In conclusion I think that the most important point I got out of Dr. Johnson's paper is that his studies give us reassurance that, in general, the Negri body test is a very satisfactory test.

THE ROLE OF THE PATHOLOGIST IN THE MANAGEMENT OF CANCER

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It was a great pleasure to hear the internist and the surgeon on this symposium state that the pathologist should be recognized as a consultant. My concept of the role of the pathologist in the management of cancer can be very briefly stated. He occupies the key position in any clinic or other organization devoted to this purpose. His contribution is of equal importance with that of the surgeon, the roentgenologist and other specialists.

A convenient and, for our purpose today, useful approach to the role of the pathologist in the management of cancer is a historical one. Prior to the middle of the last century, when Virchow began his work on the diagnosis, dif-

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*Presented before the Illinois Society of Pathologists, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 20, 1941.

ferentiation and classification of tumors, it was almost impossible to differentiate between cancer and many other diseases, particularly chronic inflammations, such as the infectious granulomas. His diagnosis and classification were based upon the answers to two questions applied to each tumor. Is the tumor organoid — composed of parenchyma and stroma and thus resembling an organ; or is it histoid — composed of only one type of tissue? Is the tumor typical, and reproduces the normal histologic architecture of the organ or tissue of origin; or is it atypical and varies markedly from the normal structure of the organ or tissue from which it is derived? Organoid tumors were epithelial in character and were papillomas, adenomas or carcinomas; histoid tumors were of meschymal origin and were any of the connective tissue tumors, including sarcomas. "Typical" tumors were benign; the "atypical" ones, malignant. Virchow's classification of tumors were purely morphological.

This contribution of Virchow stimulated great interest in the subject of tumors in general and in cancer in particular. The literature teemed with papers based upon studies of tumors of all types and locations with their morphologic classification. It soon became evident, however, that this method of study did not reach the problem of the fundamental nature of cancer. Such study was purely descriptive and not explanatory and seemed to end in futility. Perhaps the acme of this futility was reached in Bland Sutton's book, "Tumors: Innocent and Malignant," first published in 1894 and now out of print. It contains descriptions of the most unusual and bizarre tumors encountered in his own practice and found in the literature — mandibular tubercles on children, dogs and on the bust of a money-lender found in the ruins of Pompeii; cervical auricles on children, goats and the faun of Roman mythology; epithelial horns; and hairlip frogs. He even quotes Shakepeare in connection with hairy moles—Cressida's remark concerning Troilus' beardless chin: "Alas, poor chin, many a mole is richer" (in hair).

Virchow's method and its results in the mere accumulation of facts concerning the morphology of tumors also led to a state of the utmost pessimism concerning cancer. The cases of this disease that were examined were almost invariably in a late stage, or even had resulted fatally from the tumor itself. It became the fixed idea of surgeons and pathologists that all cases of cancer were totally hopeless. It was only much later that they came to realize that cancer is at first a local disease and can be eradicated if it is in an accessible location. Although Virchow's work revealed nothing as to nature and causation of cancer and induced a feeling of deep pessimism concerning treatment of the disease, his method of asking two definite questions concerning each tumor is still used in diagnosis today by every pathologist, either consciously or unconsciously.

Interest was again aroused in cancer by the work of Jensen in 1903. Others had transplanted tumors from one animal to another but Jensen was the first to do this through a long series of animals and to formulate the principles that govern successful transplantation. In fact, the Jensen tumor is still being carried on in rats to this day. Again there was great activity in cancer research. Many investigators searched for transplantable tumors, and the Flexner-Jobling and many other strains were discovered and are still being transmitted from animal to animal of the same species. But it was soon found that transplanted tumors differed in several significant respects from spontaneous tumors. For example, they do not readily metastasize. Again, the search for the secret of the true nature of cancer seemed to have gone up a blind alley. But, as with the work of Virchow, at least one important contribution came from the study of transplanted tumors. It was found that they could be made to metastasize if they were massaged or roughly handled. This was a very definite warning to surgeons that spontaneous cancer, which naturally tends to metastasize, must be handled with great gentleness. It is quite possible that the lives of many patients have been saved by the observance of this principle.

After the exhaustion of the apparent possibilities of Jensen's method, again there came a period of pessimism in connection with the discovery of the true nature of cancer. But a few years later interest was again aroused by another discovery. Fibiger found in a cancer of the anterior stomach of a rat an animal para-

site which was identified as one stage in the life history of a small cestode worm. The larval stage of this worm was passed in a certain species of cockroach. Fibiger searched the City of Copenhagen for a supply of these insect pests that were infested with this parasite. Finally he located what appeared to be an inexhaustible supply in a sugar factory in the outskirts of the city. But just as he was ready to begin work on his problem, the factory burned down and this investigation came to an end. It is doubtful whether it would have yielded much of value because of its evident limitations and uncertainties. But even so, several tumors of lower animals were discovered that were associated with the presence of an animal parasite, for example, the sarcoma of the liver of rats associated with the presence of Tenia crassicolis as described by Bullock and Curtis.

The present stage in the study of cancer began in 1914 when Yamagiwa and Ishikawa announced that cancer of the skin could be induced by painting the skin of rabbits and mice with crude tar. Soon thereafter Strangeways and his co-workers and others began to search among the numerous constituents of crude tar for the particular substance or substances that possessed carcinogenic action. When it was discovered that some of the carcinogenic agents were closely related chemically to sex hormones and to bile salts, work on the effort to discover the true nature, and the mode of origin, of cancer became widespread. Workers everywhere plunged into this problem. The synthesis by chemists of new substances which are not found in nature has revealed a great number of chemical compounds capable of inducing cancer.

The successful production of cancer by artificial means has yielded two very significant byproducts. It has pointed out the importance of chronic irritation in the mechanism of cancer production, and it has made possible the microscopic examination of the very early stages in the development of malignant tumors — a study that, if left to chance findings in human material, would progress very slowly. The recognition of early cancer has acquired special importance in connection with the role of the pathologist in the management of cancer, as will be pointed out later. Furthermore, only one trained in tissue pathology is capable of judging the results of attempts to produce cancer by any means because no agent can be said to have induced cancer until its presence has been proved by microscopic examination. As every pathologist knows, it is by no means always easy to differentiate between a very early stage in the development of malignant tumors and the hyperplasia of tissues that frequently follows irritation and inflammation. Sometimes the pathologist is not sure and expresses a guarded opinion.

The attitude of both the pathologist and the surgeon toward cancer has changed very much during the last twenty-five years. The old pessimism has given place to hopefulness and even to optimism, sometimes, perhaps not fully justified. It is because of the discovery that early accessible cancer can frequently be completely eradicated that the modern methods of management of cancer have been developed and are being applied successfully in an increasing number of patients. Such management depends, for its success, upon the cooperation and collaboration of many different people.

In the first place it was necessary that the lay public be informed concerning certain signs that might mean cancer in order that those who show these signs will seek medical attention without delay and at a time when successful eradication is possible. The American Society for the Control of Cancer has been especially active in spreading information — because of the wholesome enthusiasm with which it has been spread one might almost call it propaganda — concerning hope of cure of accessible cancer if adequate treatment is instituted early. The education of the public concerning cancer has been so rapid that there is danger that it will outstrip the education of the medical profession in the best methods of management and treatment of this otherwise uniformly fatal disease. In any case, patients with cancer are seeking medical attention much earlier than heretofore and both pathologists and surgeons have been forced to become acquainted with the characteristics of its early stages — the one with its symptoms and physical signs, the other with its microscopic appearance. These may be quite different from those of the late stages of the disease when any sophomore medical student

could make the clinical and microscopic diagnosis with only a small percentage of error.

The underlying principle of the modern management of cancer is coordinated team work. It is improbable that any one man can perform all of the duties and carry out all the techniques required. Any organization that sets itself up to manage cancer must contain at least a surgeon, a roentgenologist and a pathologist. This is the minimum requirement in personnel. There should also be added to the group an internist to advise concerning the diagnosis of cancer in deeper organs, and specialists who devote attention to each particular part of the body for advice in connection with tumors in special locations. It would be well also to have on such a team a chemist and a physiologist. These could offer many helpful suggestions concerning special features of this disease. Each member of the team should have equal standing. Each should be considered as a consultant who is able to add something to the full understanding of cancer and to its management in any particular patient.

It is my duty to discuss the contributions which a pathologist may add to the study of cancer by such a team. As stated earlier in this paper the pathologist occupies the key position in such a scheme. The final diagnosis depends upon him. For cancer can not be accurately diagnosed except by microscopic examination. No method of treatment of this disease can be said to be effective unless all of the cases treated have been proved to be cancer by this means. Furthermore, the pathologist on such a team should see every patient before treatment is instituted. In certain cancers, particularly of the breast, the pathologist should be present at the operation in order that he may direct the removal of a portion, or preferably all of the tumor, for quick frozen section diagnosis. His report will determine the extent of the operative procedure.

In any doubtful case in which a biopsy is to be taken the pathologist should be present to direct the taking of the tissue for microscopic examination. He will not attempt to dictate to the surgeon how he shall operate on the patient, but he should be permitted to dictate how and from what part of the growth the tissue shall be taken for biopsy diagnosis. For the success of a biopsy and of the treatment which follows depend entirely upon the securing of a piece of tissue that truly represents the lesion in question. A biopsy improperly made may be worse than useless because it may give rise to an entirely erroneous diagnosis and thus jeopardize the life of the patient and, incidentally, the success and reputation of the team.

It is not necessary in this symposium to discuss the value of biopsy in the diagnosis of cancer. This operation may be accompanied by some dangers but they are potential rather than actual. If properly made a biopsy is practically harmless. This is particularly true in cases of lesions of the breast in which the suspicious "lump" is entirely removed with an electric knife which kills all cancer tissue through which it passes. By means of a biopsy such unfortunate mistakes as the radical removal of a breast for a benign lesion or the amputation of a leg for a giant cell tumor of bone may be avoided.

The pathologist can also direct the performance of an Ascheim-Zondek test, or one of its modifications, for the purpose of determining the nature of certain tumors of the sex organs and for purposes of prognosis after operation. A consistently negative test after operation in a case that was previously positive will enable the physician to render a favorable prognosis.

The grading of tumors can be done satisfactorily only by a pathologist especially trained in tissue work. The principles established by Broders for grading cancers of the lip have been applied, with the necessary modifications required by the differences in the tissue involved, to cancers in various parts of the body. The grading of tumors is considered by many pathologists to be of less value than the amount of work entailed. Grading of cancers of the tongue have been shown by Broders to have some prognostic value. Shields Warren has demonstrated a similar value in cancers of the cervix of the uterus. Two noteworthy difficulties present themselves in the grading of tumors. In the first place, personal judgment and experience of the pathologist are important factors. For this reason there may be a lack of uniformity in the grade in which a particular tumor is placed by different pathologists. In the second place, as Bell has aptly remarked, a cancer

is as malignant as its most malignant portion. Hence the determination of the grade of any tumor may be misleading if it is based upon a general average of the microscopic appearance rather than upon those portions which show the greatest amount of anaplasia. However, in spite of labor involved and the pitfalls into which it may lead, the grading of tumors might well be made a part of the routine study of every case of cancer in any well organized tumor clinic. The results must always be interpreted in the light of the limitations of the procedure.

Finally, the pathologist may add much to the selection of the type of treatment to be instituted. This applies particularly to the problem of whether surgery or radiotherapy shall be the treatment of choice. Every pathologist is, or should be, familiar with the principles upon which the decision as to degree of radiosensitivity or radioresistance of a tumor is based. The diagnosis of each tumor should be accompanied by an opinion by the pathologist as to its probable degree of radiosensitivity. This will not only be of aid in determining whether surgery or radiation will be used as the chief method of treatment but also the likelihood of destruction of remaining tumor cells by radiation after surgical removal of the primary growth.

As a member of a team devoted to the management of cancer the pathologist can add much that will be of value to the patient and to the team as a whole. He will make the final diagnosis by microscopic examination. He should direct the surgeon in taking tissue for biopsy in order to obtain the most reliable results. By making an Ascheim-Zondek test in tumors of certain organs he can determine before operation the nature of the tumor, if the test is positive, and after operation can furnish a basis for an accurate prognosis. For whatever it is worth, he can determine the probable grade of malignancy of a tumor. He can give an opinion as to the degree of radiosensitivity of a tumor and thus aid in determining the type of treatment and the probable success of destruction by postoperative radiation of tumor cells that may have been left behind.

For his contribution to have the highest value the pathologist must be recognized as an equal of other members of any team or clinic devoted to the management of cancer. As stated in the beginning it is a pleasure to hear an internist and a surgeon state that the pathologist should be recognized as a consultant in medicine. When this is done not only the management of cancer but the practice of medicine and surgery in general will be greatly improved. For the pathologist, whose speciality is disease, can add much to a study of its varying manifestations.

ADVANCES IN OPHTHALMOLOGY IN 1941

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In reviewing the American Ophthalmic literature for 1941, one discovers no one article that offers any outstanding contribution to the science of modern ophthalmology. Rather there are a number of contributions which tend to throw light on previously announced contributions. There are also a number of articles reporting work, both clinical and laboratory, on the effect of the sulfonamide derivatives on diseases of the eye. Vitamins, particularly the B-complex, have received considerable attention by ophthalmologists.

The importance of the early recognition and treatment of glaucoma was emphasized anew by Cowan and English[1] reporting on Thirty Thousand Blind Eyes in the State of Pennsylvania. This report, probably the most accurate ever published involving such a large series of eyes, lists as the most common causes of blindness: Ophthalmia neonatorum 2.4%, Congenital Anomalies 5.2%, Trauma 10.3%, Glaucoma 11.0%, Uveitis 11.9%, and senile cataract 28.8%. The importance of early recognition of glaucoma by the general practitioner has been frequently stressed by Gradle[2] who states that the disease can be recognized frequently by such ordinary methods of examination as palpation, external examination of eye and routine ophthalmoscopy to ascertain the status of the optic nerve head. There have, in addition, been an increasing number of reports on gonioscopy (the direct observation of the angle of the anterior chamber, an area not seen by ordinary methods of examination) which are undoubtedly going

to cause a revision of our ideas on the classification of glaucoma. This will, of course, have a tremendous effect on current methods of treatment.

The use of sulfonamide drugs in general medicine has been paralleled by the use of these drugs in ophthalmology. Since Loe's[3] report in 1938 on the use of sulfanilamide in the treatment of trachoma, there have been many reports on this subject. All of the authors are in essential agreement as to the value of this drug in certain stages of the disease, but there is some variance as to the methods of administration. Numerous articles have appeared during the last year, but more work must be done before the various methods of treatment can be sufficiently evaluated to evolve a standard method of treatment. The effect of the various sulfonamides on gonorrheal ophthalmia has also been extensively dealt with, but as is the case with trachoma, no standard, widely accepted method of treatment has as yet been evolved. One of the difficulties in this respect is the securing of sufficient case material, inasmuch, as ophthalmia neonatorum is becoming exceedingly rare, and gonorrheal urethritis is being so quickly controlled by the use of the sulfonamides, that associated conjunctivitis rarely occurs.

The drug of choice now seems to be sulfathiazol by mouth in dosages of one grain per pound of body weight, plus adequate local treatment in the form of irrigation and intramuscular milk. It has been demonstrated that sulfathiazol loses some of its potency if administered after heating.

The sulfonamides have been tried in other conditions without such promise of success namely uveitis, sympathetic ophthalmia, catarrhal conjunctivitis, etc.

Thygeson[4-5] has reported very favorable results in cases of Staphylococcic blepharo-conjunctivitis with the use of Staphylococcus toxoid intramuscularly combined with sulfathiazol 5% ointment applied locally. This treatment bears great promise in a condition which has long been recognized as a very difficult one to clear up satisfactorily. Inasmuch as many of the acute inflammatory lesions of lids and conjunctivae are the result of staphylococcic infection, most particularly hordeoli, 5% basic sulfathiazol ointment is being employed more and more with great success.

The emphasis that has recently been placed on the vitamins has also been reflected in ophthalmology. Several comprehensive reviews on this subject have appeared in the ophthalmic literature[6-7] with particular reference to vitamin B. The consensus of opinion seems to be that the Vitamin B Complex may be of value in diseases of the optic nerve such as retrobulbar neuritis, toxic amblyopia, and possibly some corneal diseases. The dispute still rages as to the benefits of Vitamin A in cases of poor dark adaptation, with the lay public seizing avidly on the idea that eating carrots makes good aviators.

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The detrimental effect of war on the morbidity and mortality of tuberculosis is well known from the lessons of the Great War of 1914-1918. According to the consensus of opinion it was due to a multitude of factors and circumstances, such as malnutrition, overcrowding, overwork and, in some countries, suspension or curtailing of public health services, diminution of beds available for treatment, etc. These conditions and circumstances cannot be eliminated from war and a similar increase in mortality and morbidity of tuberculosis is generally expected. In England there are at least five additional major factors present at this time which did not exist in the last war: intensive air raids, black-out, mass migration of the population, shelter life and conscription of women. Closer scrutiny of the tuberculosis problem, however, raises some hope for a more optimistic view. In 1914-18 the diagnosis of early tuberculosis was a difficult one, tuberculosis welfare was undeveloped, collapse therapy was restricted to a few cases and thoracic surgery did not exist. Whether these methods are sufficient to prevent an increase in the disease cannot be answered yet. F. Kellerman, M.D., Tubercle, Sept., 1941.

HEMOCHROMATOSIS

A Case Report

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Hemochromatosis is a rather rare condition; in all probability due to a disturbance in iron and perhaps copper metabolism, characterized classically by brownish pigmentation of the skin, asthenia, cirrhosis of the liver and pancreas and usually with a diabetes mellitus. This condition is chronic, usually seen in males past middle age and unusual in females. It offers at times considerable diagnostic difficulties and many times diagnoses have only been made at post mortem. We offer this case report because of several interesting features, viz: a clinical bedside diagnosis was established; because of the occurrence of this disease in a female; and to emphasize the use of the Fishback Skin Test as an aid in the diagnosis of this condition.

Troiser in 1871 first described a "Bronze Cachexia," occurring in diabetes, and ten years later Hanot and Chaufford called attention to a condition which they termed "Bronze Diabetes." It was described and named "hemochromatosis" by von Recklinghausen in 1899. Since von Recklinghausen first described it less than 400 cases have been reported in the literature. Here at Cook County Hospital, where in the past ten years probably over twelve thousand autopsies have been done, the case here reported is the only classical one to date. Rosenthal, however, did report a case of hemochromatosis and primary carcinoma of the liver from this institution in 1932. At that time he suggested the inability of the liver cells to reduce ferric to ferrous iron as the underlying physiological abnormality in hemochromatosis. Sheldon in 1935 made an analysis of 311 "genuine" cases reported in the literature, of which 16 or only 5.1 per cent were in women. Mallory, Hall, MacRay, Rammage, Sheldon and others made studies of hemochromatosis with special reference to the copper metabolism and perhaps chronic copper poisoning. Dry, of Mayo Clinic, in a study of iron and copper metabolism in a case of hemochromatosis concluded that "hemochromatosis is the result of faulty elimination of iron, the result of an inborn error of metabolism, expressing itself as a disturbed intracellular circulation of iron, leading to increase in the amounts normally present with ultimate destruction of the cell and replacement by fibrous tissue."

Schnitter, calling attention to the work of Dworak, emphasizes the high blood cholesterol in this disease as a diagnostic difference from Addison's disease, in which the blood cholesterol is normal or even below normal. Fishback recently has described a skin test for use as a diagnostic aid in this disease. The test is very simple and consists of injecting a small amount of a mixture of equal parts of 0.5 per cent of potassium ferrocyanide and 1/100 normal hydrochloric acid intradermally. A reaction positive for iron is indicated by the development of an area of blue or purple at the site of the injection within a few minutes. This test was employed in our case and gave a good positive response as compared to controls performed on a medical student and another patient. Butt and Wider of Mayo Clinic in a report of thirty cases diagnosed during life in a period of fifteen and one-half years, in which twenty-nine cases were males and only one was a female, believe that death in this disease is due to hepatic insufficiency rather than the diabetes mellitus. They believe that it is advantageous to resort to diets rich in carbohydrates and restricted in meats when this form of diabetes is being treated.

CASE REPORT

History: A. W., a 63 year old white female was admitted to the Cook County Hospital, February 7, 1940, with an admission diagnosis of diabetes mellitus. The patient stated that three years ago she noted a generalized weakness that had become progressively worse. She was told by a physician that she was suffering from "anemia, leakage of the heart and a bad lung." In August, 1939, she began to suffer from persistent headaches; her weakness became worse, and she noted a great thirst and urinary frequency at that time. She was placed on liver extract therapy and a vacation in the country was advised. Shortly after her return she fainted one afternoon and her physician at this time made a

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diagnosis of diabetes. She was placed on a diet with insulin; despite this she became progressively worse and lost about thirty pounds in weight. She had a cholecystectomy ten years ago; otherwise past and family history were not significant.

Physical Examination: The essential findings revealed a 63 year old white female, emaciated, lying quietly in bed and apparently suffering from a chronic disease. There was a diffuse grayish-brown discoloration of the entire skin but the mucous membranes did not appear pigmented. The temperature was 98.5 F, pulse 80, and of fair quality, respiration 20. The blood pressure was 90 systolic and 50 dystolic. There was evidence of marked peripheral arteriosclerosis. The heart did not appear enlarged on percussion and there was a rough systolic murmur heard over the entire precordium. Lungs appeared clear. Abdomen revealed an ancient right upper quadrant scar. The liver and spleen were enlarged and palpable about two fingers' breadth below the costal arch. There was no evidence of ascites and the reflexes were normal.

Laboratory findings on admission revealed the following: Urine showed sugar four plus; no albumin; no acetone; no diacetic acid; specific gravity 1 021. The blood showed a R. B. C. of 3 060 000; hemoglobin 65; W. B. C. 4 400; polymorphonuclears 45; eosinophils 1; lymphocytes 53; monocytes 1. Blood chemistry revealed the blood sugar to be 333 mgm. per 100 cc; non-protein nitrogen 27; creatinin 1.5. The Kahn test was negative.

Our bedside impression was that this patient was suffering from generalized arteriosclerosis with atherosclerosis of the aorta and fibroplastic and calcific deformity of the mitral and aortic valves, and diabetes mellitus of the so-called "Bronze Diabetes" type or hemochromatosis. In the differential diagnosis one had to consider an associated Addison's disease or some type of masker malignancy with adrenal metastasis, some form of metallic poisoning or even an aleukemic leukemia. We accordingly advised the following to be done, viz:

1. Fishback Skin Test for hemochromatosis.
2. X-ray chest and a flat plate of the abdomen.
3. Blood sodium and potassium determination.
4. Biopsy of skin for iron and pigment.
5. Skin consultation.

Course: Patient was placed on diabetic management though not well controlled, as due to age and sclerotic features no great attempt at absolute control was made. On February 9, 1940, x-ray of the chest revealed an enlarged heart and calcification of the aortic knob, no evidence of pulmonary pathology. On February 14, 1940, flat plate of the abdomen revealed no evidence of calcification of the adrenals; blood sodium and potassium determinations were within normal limits. On February 19, 1940, the Fishback Test was done and gave a definite positive reaction. On February 24, 1940, the skin consultant believed this to be a case of "Bronze Diabetes," and several days later a skin biopsy revealed definite iron deposits. The patient ran a progressive downhill course and expired March 9, 1940, thiryt one days after admission to the hospital.

A post mortem was performed, and the following anatomical diagnosis made:

1. Periportal cirrhosis of the liver (hemochromatosis).
2. Marked atrophy of the pancreas.
3. Slight fibroplastic and calcific deformity of the mitral and aortic valves.
4. Dilatation of all cardiac chambers with endocardial sclerosis of the auricles.
5. Marked softening of the spleen.
6. Multiple cortical adenoma of the adrenals.
7. Marked passive congestion and cloudy swelling of the liver and kidneys.
8. Slight hemorrhage cystitis.
9. Meckel's diverticulum of the lower ileum.
10. Benign nephrosclerosis.
11. Pigmentation of the skin.
12. Emaciation.
13. Marked melanosis of the colon.
14. Old fibrous adhesions of both pleural cavities.

Microscopic Sections:

Liver: Marked periportal cirrhosis with large amounts of iron deposits.

Pancreas: Marked atrophy, fibrosis, iron deposits.

Skin: Revealed iron deposits.

DISCUSSION

The exact cause of hemochromatosis is not known although the disturbance in iron metabolism seems to be a definite feature in all cases. The case described was unusual in that it occurred in a female. Its similarity to Addison's disease can be appreciated, but this can be ruled out if proper studies of the blood for sodium, potassium and cholesterol are made. The detection of hemosiderin in the urine by the method of Rous is of value in cases of hemochromatosis. The Fishback Test offers something of definite value and should be employed in all suggestive cases, especially when the skin biopsy is doubtful.

The exact cause of death in these cases is speculative. Today the control of diabetes with the use of insulin is so much better than formerly that Butt and Wilder believe the cause of death is due to liver insufficiency. This, however, is not the only factor — the marked pancreatic atrophy, especially in cases with severe asthenia, has to be considered. One of us (H. F.D.), while doing duodenal short-circuiting operations on dogs, recalls that in all those animals there was marked asthenia and progressive

wastings, and an outstanding post mortem finding was pancreatic atrophy. This was true even in those animals which had not developed gastrointestinal ulcers.

SUMMARY

1. A case of hemochromatosis occurring in a female is reported.

2. The use of the Fishback Skin Test in the diagnosis of this condition is emphasized.

3. The cause of death in these cases is speculated upon.

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POWDER

Doctor: "Your husband must have absolute quiet. Here is a sleeping powder."

Wife: "When do I give it to him?"

Doctor: "You don't give it to him — you take it yourself."—*The Highway Traveler.*

THE ROLE OF PATHOLOGY IN MEDICINE

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On first thought, it is presumptious for an internist to discuss pathology in medicine. Hearing the word pathology strikes me with awe. However, on second thought, we all employ, directly or indirectly, the old the rapidly increasing knowledge of pathologic phenomena in everyday medicine. From prenatal days until one dies, there is a constant parade of his problems passing before men of medicine who require specific knowledge about his anatomy, physiology and pathological processes. These problems require detailed information and experience with nutrition and resistance as well as the variations and fundamental functions caused by infection, endocrine, malignant and degenerative disorders. The man of medicine, assuming such responsibility for his fellow men, will call more and more for new and better assistance in the prevention, diagnosis, and treatment of disease. It is not surprising, therefore, that the clinical pathologist is rapidly rising in our minds as the man to whom we must turn for much of this information.

We internists have been slow in appreciation of the broad aspects of clinical pathology. We are quick with our demands, but we have given little attention to facilitating the development and functions of the laboratories which so greatly amplify our diagnostic and therapeutic efficiency.

The rapid development of the use of vitamins has pressed the development for specific laboratory tests of vitamin deficiency which are being pursued on a wide front. Likewise the clinical demand for improved specific serum for the treatment of pneumonia vividly focused our attention to the great variations of the pneumococcus long observed in the test tubes of the bacteriologist. In this same vein, the newer knowledge of serology shows the reactions to be general biologic phenomena[1]. The man who has

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Presented before the Illinois Society of Pathologists, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 20, 1941.

had much experience with syphilis uses the positive serologic reaction as a reason to investigate the cause of the reaction. The so-called "typing" of the reaction, then, may tell whether it is one of general biological phenomena which may have been altered by temperature or by electrolyte, cholesterol, pigment or protein content brought about by disease other than syphilis. Accordingly, Kahn[2] has recently stated that such consideration should remove the objection to routine testing of blood, and it would enhance the control of syphilis. Certainly, there is much more involved in the care of syphilis than has been determined thus far by a test tube reaction. To pounce upon a human being with a barrage of powerful metals without careful consideration and continued observation is to be discouraged. It is under just such circumstances that the well trained clinical pathologist should be invaluable.

When Dr. Philip Hillkowitz[3] gave his presidential address before the second annual meeting of the American Society of Clinical Pathologists in 1923 he stated that the "functions of the clinical pathologist are not ended when he or his technicians carry out laboratory tests ordered by the clinician — it should be emphasized that the pathologist is a consultant in medicine — his office a meeting place for attending physicians."

Amplifying the same thought, Dr. Wm. MacCarthy, the next president of the society, said[4] in his address the next year, " — The pathologist of 1940 will be the greatest correlator of all the facts about disease from the standpoint of the whole patient and not a narrow specialist upon an organ or technical laboratory procedure." Such well trained pathologists, he hoped, "might be the leading medical consultants in the year 1940."

Then, no doubt, 1940 seemed far away, but it has passed and I fear that we have far from reached the goal to which Doctor MacCarthy aspired. Not only have we failed to develop such an interlocking service which would embody biochemistry, physiology, serology, immunology and tissue growth, destruction and repair[5], but we have failed to develop the properly trained men to make such consultation possible. I understand that there are only about 500 certified clinical pathologists in the whole country[6]. What, then, are the possibilities for improvement?

Obviously, much of the fault must lie with us internists who have not clearly visualized the scope and growth of modern medicine. Next, the clinical pathologists have not presented their work and their departments so that the proper understanding and development could be achieved. Certain fundamentals warrant our attention. The first is to broaden the base of our teaching of clinical pathology in our medical schools. The curriculum is more than crowded now, but room or adjustments must be made for necessities as they arise, just as we have always met the orderly growth of medicine. The old course in biochemistry was not popular when I was a student because it did not seem related to the care fo the patient. In contrast now, biochemistry has a real place in the medical student's mind. Here at Northwestern University Medical School, one of the most popular courses is applied physiology which employs a lecture on fundamentals by the chairman of the department, combined with one by a member of the clinical division, who correlates and applies the principles discussed.

I was surprised last week when polling the students of one of our medical clinics for their choice of topics to be discussed during the remainder of the term, to find that a high percent of the class requested that a whole section be devoted to the use and interpretation of clinical pathology.

The second point suggested for improvement should be the encouragement of the selection by the students of clinical pathology as a specialty. His training would be long and carefully planned. My assignment to a luetic clinic for a year and a half was disturbing when at first it seemed to delay my course to a proficiency in cardio-vascular disease. However, it was a most valuable training and it caused me to appreciate fully a real syphilographer. One who is best qualified to treat syphilis must not only know serology, chemistry, dermatology, and diseases of the bones, liver, heart and blood vessels; he also must be skilled in neurology and psychiatry as well as one of the most delicate fields of psychology. No less training is needed for a skilled clinical pathologist who is to serve the modern hospital staff. Not only should the man

who has thus prepared himself for the specialty of modern pathology be trained in clinical medicine, surgery and obstetrics, but he should have ample facilities for close contact with the patients in his hospital. Unless one keeps in close contact with clinical medicine he rapidly drifts away from its alert study collectively and certainly individually. The application and diversified study by laboratory means would be less apt to stop short if he were in direct contact with the patient and his problem. Our X-ray colleagues demonstrate this point well by requesting a statement about the case, and even then, they alter and repeat their studies very frequently after seeing the patient in the X-ray department. I am sure that diagnostic contributions would be obtained likewise by the ward walks of the clinical pathologist. The pathologist who has had a proper clinical training would add greatly to the teaching of the attending and resident staff if he were assigned a regular ward round. Again, a fine type of clinical research should be made possible for the hospital pathologist. His attending staff rarely has the time or the facilities to carry a problem to a successful conclusion. But the aggregate material thus assembled by the various members always supplies more excellent problems than can be solved in a decade. Research by the full time man often needs stimulation by contact with the pressure of disease in action. The observation that in pneumonia the chlorides often largely disappeared from the urine was discussed many years before explanation was made of where they had gone. The reason is not yet known. The clinical observation of the role of salt in edema of heart or kidney disease has only recently received physiologic attention. However, some of these observations have opened the way for the study of the hormones which affect specific minerals of sodium and potassium as well as water balance.

The very common clinical problem of cardiac efficiency as influenced by specific minerals, diuretics and diets is only in its elementary chapters of investigation. The use of hormones and minerals in pregnancy, surgical shock, and burns, as well as in the new field of amino acids and chemotherapy all invite investigation. We do not know how an infecting agent causes disease, what changes occur in the host or what secondary changes of cellular processes or vital forces take place so that proper nutritional, mineral or chemotherapy can be supplied. It is important, therefore that adequately trained assistants and properly equipped laboratories should be put at the disposal of the clinical pathologist in order to carry out proper research in each community, which in turn stimulates every member of its staff.

When one of our profession may be induced to become a truly well trained clinical pathologist, we should make certain that his salary is commensurate with his training and his ability. Only then, may we expect to find our better students entering this fascinating field of diagnostic medicine.

Lastly, the lack of the average institution's facilities for making many specific procedures and the burden of their cost, brings great pressure upon the state and county for tax supported laboratories and civil service employees. The rate and size of growth of these institutions and their ultimate effect on the private practice of medicine as we know it today, deserves our urgent consideration.

The newer field of microbiologic methods should be pressed in the attempt to reduce cost as well as advance our knowledge. Dr. Ide in 1901 was aware that certain essential foods were necessary to grow yeast plants. Five of these essentials (called bios) are identified[7] as thiamin, pantothenic acid, pyridoxin, arotin and inosital. Thus five of the seven vitamin B fractions may be studied with the yeast plant. This shock should stimulate research farther for simple and inexpensive means to supplant long, tedious and burdensome studies in animals. It is far from being humorous that the cockroach can be reared to maturity without vitamin A.

Thus it would seem that the role of pathology is greater than we are at present equipped to utilize. Growth will be along the line of broad fundamental training in medical schools, encouraging able men to enter the field of clinical pathology as a specialty, and supplying them with adequate facilities for clinical contact, clinical research and clinical teaching.

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INTERNAL FIXATION OF FEMORAL NECK FRACTURES IN PSYCHOTIC PATIENTS (A PRELIMINARY REPORT)

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Fractures of the neck of the femur have constituted a major problem of treatment at the Elgin State Hospital. Because of the special problems that arose from trying to maintain psychotic patients in traction, casts, or other types of external appliances, the results obtained from the treatment of these cases were very disappointing. Cognizance was taken of the accepted method of treatment by the Whitman's[1] abduction technic consisting of reduction of the deformity and application of a plaster cast with the leg in abduction and internal rotation without materially affecting the problem. The expected results were either non-union with disabling deformity, or death. The frequency of such sequelae in reports of the end results in the treatment of mentally sound and cooperative patients was conducive to discourage any treatment of these cases except by immobilization of the extremity in sand bags or a fracture box.

With the general acceptance of the treatment of femoral neck fractures by internal fixation as advocated by Smith Peterson[2] a new era was begun in the treatment of these cases. The principle involved was that of maintaining a satisfactory reduction by impaction and some internal immobilizing device through the neck of the femur. The three flanged nail of Smith Peterson, a two flanged nail, pins, wires, bone pegs, and screws have been used by various authors. The metals employed have been ordinary steel, stainless steel and vitallium. In applying this method of treatment to our cases we felt that the individual method employed was relatively unimportant as long as the basic principles were adhered to and that one was familiar with the method employed. The advantages of a screw device or corkscrew bolt as employed by Lippman[3] in 1936 offered the greatest advantage in our cases as it could best maintain impaction without necessitating a cast following the operation. Such impaction could also be obtained by the use of ordinary carpenter screws as used by Martin[4]. Since September 1938, at which time we fixed our first hip at the hospital, we have used this latter method. There has been no reaction from the use of ordinary steel and one set of screws removed six and twelve months after insertion showed no erosion or other change.

We have treated both intracapsular transcervical fractures and extracapsular intertrochanteric cases by the same method as a treatment of choice in that it enables us to satisfactorily handle these patients without necessity of resorting to external appliances. Of 9 cases so treated to the present time three have expired for reasons unrelated to the fracture or operative treatment. The results in the other 6 cases have been satisfactory.

Method — Immediately following the recognition of the fracture, the patient is placed in Russell traction to control pain and reduce the deformity. Traction is continued for from 2 to 10 days to combat shock and while awaiting operative permit. A preliminary period of traction is also recommended in patients whose unsatisfactory condition contraindicates immediate surgery.

It is not necessary to use a general anesthetic. We have employed local anesthesia in all of our cases and have found this to be practical in even excitable patients with the proper use of pre-operative sedation. The line of incision over the trochanters is infiltrated with 2% procaine hydrochloride. The fracture site proper and the capsule of the hip joint are similarly infiltrated. This anesthesia is sufficient to allow for the manipulation of and reduction of the

Abstract of a paper presented December 1939 to the staff of the Elgin State Hospital; Charles F. Read, M. D.; Managing Officer.

fracture by either the Leadbetter or Whitman maneuver. A three inch to four inch needle may be inserted superficially on the skin as a marker and guide to help localize the angle of the neck of the femur. With the extremity maintained in slight abduction and in a position of approximately 20 degrees of internal rotation moderate continuous traction is applied by an assistant and a control x-ray examination is made before proceeding with the operation. Since the patient is under local anesthesia, there is no need for hurry and adequate x-ray control can be utilized. A portable x-ray apparatus is desirable but due to the absence of such equipment we have performed the operations in the x-ray department on the x-ray table and can recommend this procedure wherever such portable equipment may be lacking.

The area in the region of the trochanter is then prepared surgically and the patient is suitably draped. An incision varying in length from one and a half to not over three inches is made longitudinally over the greater trochanter and proximal portion of the shaft of the femur. The incision is carried down to the bone and the soft tissues are reflected subperiosteally exposing the shaft just distal to the trochanter. A drill hole is made with either a 5/32 or 3/16 inch drill. The former if a No. 8 screw is to be used and the latter for a No. 10 screw. The drill hole should start at the base of the trochanter and should point to the head which is situated at the midpoint between the anterior superior spine and the symphisis pubis. The drill hole should only extend through the distal fragment and is large enough in diameter that the screw may slide through this fragment and only engage the head fragment. Thus when the distal end of the screw engages and the head of the screw is against the shaft of the femur the fracture fragments are drawn toward each other and thus impacted. A second screw is inserted either above or below the first, to further immobilize the fragments and to prevent possible rotation. Check up x-rays may be made at any point in the procedure. We have been in the habit of taking a film following the insertion of one screw to check the length of screw used as well as their position. The screw length needed is from three to four inches. It is desirable to start with the thinner No. 8 screw so that if reinsertion is indicated there will be the option of the heavier one. It is to be noted that with the leg in 20 degrees of internal rotation the angle of the neck is level with the horizontal and the screw insertion is on a level with the horizontal also.

Final check-up x-ray examinations must be made in the A P and lateral positions before closing. We have found the simplest method of taking the lateral exposure to be as follows. The film is placed as for an anterior posterior exposure, and the hip is flexed with the knee bent and allowed to be abducted as much as possible without using force. This necessitates no displacement of the patient, no holding of x-ray cassette, and no angulation of tube. The films thus obtained have been very satisfactory.

If the films show the insertion to be satisfactory, the incision is closed in layers and the patient is returned to bed without a cast.

Post Operative Care — Maintaining traction of 3 to 5 pounds on the extremity for 24 to 48 hours post-operatively is desirable although not necessary. Post-operative pain is essentially limited to that of the incision and is usually less than that experienced before the surgery. Codeine and aspirin have proven ample for the pain in all cases where there have been any complaints even in the disturbed cases.

The patients may be allowed to sit up in bed or in a chair after a few days, and except for the restriction of weight bearing no special post-operative care is indicated.

Until bony union has occurred the fragments are held in place purely by the mechanical presence of the screws. Weight bearing may cause either bending of the screws or actual displacement, prior to solid bony union. It is thus desirable to prevent weight bearing for 8 to 12 weeks. However, some of our cases have gotten out of bed in the first few weeks and we have thus far not had any undesirable results therefrom. This should, however, be discouraged.

CASE STUDIES

Case A. C. R. White woman, age 50, mental diagnosis dementia praecox. Sustained a fracture of the neck of the left femur when she slipped on the floor. She was placed in Russell traction for one week, and was then operated on with the technic



CASE A. TRANSCERVICAL FRACTURE

Figure I. Before Reduction.

Figure 2. End result following reduction and screw insertion — lateral view 10 months later.

Figure 3. End result following reduction and screw insertion — A. P. view 10 months later.

CASE B. INTERTROCHANTERIC FRACTURE

Figure I. Before fixation with needle guide on skin.

Figure 2. End result following screw fixation — lateral view — 8 months later.

Figure 3. End result following screw insertion — A. P. view — 8 months later.

described above. Two screws were inserted under local anesthesia. The post-operative course was uneventful. She sat up in bed 24 hours and was able to turn around in 48 hours. She was kept in absolute bed rest for three months. At the time of this writing which is ten months later patient has a good union as checked upon x-rays and she is up and about walking with no limp whatsoever. (See case A. Fig. 1, 2, and 3.)

Case B. F. K. White woman, age 57, mental diagnosis — manic depressive psychosis, manic type; sustained an intertrochanteric fracture of the left femur when she was pushed to the floor by another patient. Patient was placed in Russell traction and operated on one week later. Two screws were inserted under local anesthesia in accordance with method described above. Post-operatively patient continued to be noisy, uncooperative, made frequent attempts to get out of bed. She had to be watched closely and required sedatives. She was kept at absolute bed rest for three months. At the time of this writing, which is eight months following the operation, x-ray shows complete union with obliteration of the fractured line. Screws remain in good position. Patient walks with no limp now and continues to be noisy, restless, hyperactive, requiring continuous hydrotherapy. (See Case B. Fig. 1, 2, and 3.)

CONCLUSIONS

Femoral neck fractures especially of the transcervical type are prone to result in non-union. These and intracapsular fracture occurring as they do in the aged and in debilitated patients are best treated by means of internal fixation. Such fixation may be accomplished satisfactorily under local anesthesia and by insertion of a fixing device through a small incision over the greater trochanter. The use of ordinary carpenters screws may be employed with good results and without bone absorption about the screws. Post operative casting is unnecessary thus eliminating the undesirable effects of casts in these elderly patients.

The special advantage of such treatment in psychotic patients is self-evident.

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THE PREVENTION OF UROLITHIASIS IN THE IMMOBILIZED PATIENT

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Within relatively recent years considerable study has been devoted to the mechanism of the formation of urinary calculi in those patients who have been confined to bed for long periods of time. In this paper particular reference is made to such conditions as fractured femurs and spines, Pott's disease, and other conditions requiring long periods of immobilization. The bulk of the experimental work has come through the recognition of the importance of the acid ash, high Vitamin A diets, and the calcium and phosphorus metabolism in that group of cases which have or have had urinary calculi.

The theories of calculus formation are worthy of consideration. Urolithiasis may be divided into two groups: primary and secondary. The primary group includes those patients in whom no urinary stasis or infection is demonstrable and in whom the method of stone formation is most obscure. Alexander Randall[1] has done a most excellent piece of work showing the presence of calcium placques just beneath the renal pelvic epithelium covering the renal papilla. The epithelium over these placques has been shown to break down leaving an exposed calcium placque upon which a stone may form. The pathogenesis of these placques has not been determined. In some instances there is obviously a defective calcium metabolism. In other instances one may speculate on deficiency of Vitamin A, cystinuria, or a disturbance in the balance of colloids in the urine, which is a true supersaturated solution. In the secondary group the formation of stones is definitely due to stasis with its eventual resultant infection. In the bedfast patient the artificial urinary stasis, in combination with the usual increased excretion of urinary calcium, is responsible to a great extent for the formation of urinary calculi.

Until very recently the prophylactic management of these patients consisted essentially in the use of the acid ash, high Vitamin A diet, the administration of large amounts of fluids, frequent changes in the patient's position, and the oral administration of acid forming drugs. However, since the publication of the experimental work of Flocks,[2] there has been considerable controversy over the regular use of this routine.

Since the majority of calculi formed in bedfast patients are composed of calcium, magnesium, and ammonium phosphate, it is very important to know whether increased urinary calcium plays a very significant role in the pathogenesis of calcium stones. In one series of cases shown by Flocks, high calcium excretion was present in 66%. Also in patients showing recurrent or rapidly forming stones, a high urinary calcium was present in almost 100% of the cases. Bedfast patients may have a high calcium excretion without having hyperparathyroidism, or without showing changes in the blood calcium or phosphorus. In most instances there may be no other evidence pointing to a defective calcium metabolism. These individuals respond to the acid ash diet by exaggerated increase in urinary calcium excretion, which is

exactly what is not desired. This proves the need for not using a highly acid residue diet in all cases. It has also been demonstrated that the urinary phosphorus in individuals with a high calcium excretion shows little change.

In a normal individual, under essentially constant conditions, the daily excretion of calcium is remarkably stable. On a diet containing 1 gm. of calcium and 1.6 gm. of phosphorus in twenty-four hours, which is the amount of these substances in the average normal diet, an individual will excrete about 200 mgm. of calcium in twenty-four hours. However, the calcium excretion can be altered by varying the intake of calcium and phosphorus, by varying the acidity of the urine and by varying the intake of vitamin D. A low calcium diet in the normal person will reduce the twenty-four hour output to 90 or 150 mg. and a high calcium diet will increase the output to 300 or 400 mg. per twenty-four hours. It rarely rises above this latter figure. Albright[3] and Chute[4] have shown that the acid ash diet will raise the calcium excretion in a normal person to 300 or 350 mg. It does this by increasing the calcium absorption from the alimentary tract and therefore simulates a high calcium intake. Likewise, vitamin D raises the excreted calcium but usually by not more than 50 mg. per twenty-four hours.

There are certain intrinsic changes in the body mechanisms which are associated with disturbed urinary calcium. Specifically these changes in body mechanism are: 1. marked body immobilization; 2. intrinsic bone disease; 3. changes in the parathyroids, thyroid, and pituitary; 4. certain intrinsic renal changes; and 5. certain intrinsic variations in individuals which are as yet imperfectly understood.

It has been definitely proved that prolonged bed rest raises the calcium excretion and even with diet low in calcium and phosphorus, values over 450 mg. per day of excreted calcium have been found. In the presence of bone disease this figure is still higher.

From the above findings a management designed to prevent urolithiasis seems quite obvious. However, such is not the case. Kearns[5] feels that more attention should be paid to intestinal putrefaction, absence of heavy meals, and the use of acid ash diet in all patients in whom the formation of calculi is liable to occur. However, he states that a strongly acid urine is not necessary and a weakly acid urine will suffice, except for patients who form cystine or xanthine stones. In such individuals a mildly basic ash diet should be given, because these stones are insoluble in an acid medium. Kearns states that in his experience the excretion of 300 to 400 mg. of calcium daily in a mildly acid urine is more desirable than the excretion of 100 mg. of calcium in an alkaline urine, because the latter causes precipitation of the calcium salts and the phosphates.

In the light of our present knowledge, which in certain phases of this question is very meager, the most desirable methods for the management of patients subjected to prolonged bed rest are as follows:

1. A forced fluid intake of not less than 2000 cc. of water per twenty-four hours should be maintained. It must be emphasized that the water should be soft, for if it has too great a concentration of mineral salts, the primary purpose may be defeated.

2. Passive and active exercise and massage should be instituted wherever such measures are feasible.

3. The third principle is really part of the second and consists in frequent change of position whenever possible. Usually it is desirable to have the head of the bed elevated to facilitate drainage of the upper urinary tract.

4. Vitamin A should be administered in capsules of plain halibut liver oil or Carotene in oil. Six to eight capsules per day are usually sufficient unless the patient has a positive reaction to night blindness tests. In such instances heroic doses of vitamin A, as large as 200,000 to 500,000 units, in twenty-four hours are necessary. Some authors feel that all the vitamins should be given because of their synergistic actions. Vitamin D is an exception, it being the general opinion that this vitamin should be curtailed. There are some individuals who cannot tolerate the oral administration of oils. For these persons the intramuscular injection of the liver oil from the black sea bass, which has ten times the vitamin A potency of halibut liver oil, can be used.

5. Urinary infection must be combated vigorously. The best drug available at present is sulfanilamide, although mandelic acid is just as effective if the urine can be kept acid. Sulfapyridine should not be used because of the known tendency of this drug to favor the production of urinary calculi. In the future one of the sulfonamides may prove more effective than any of our present urinary antiseptics. This drug, in the hands of the author has been very effective, even in combating infections due to such intractable urea-splitting organisms as the Bacillus proteus and alcaligenes.

6. In patients with normal kidneys and normal or low calcium excretion the routine use of an acid ash diet, low in calcium and phosphorus, which will keep the urine mildly acid, is essential. If the urine cannot be kept mildly acid by diet alone, drugs must be used. Ammonium chloride and ammonium nitrate are most effective but they do raise the calcium excretion a great deal. If they do not make the urine acid, they are definitely harmful. In such instances sodium benzoate with syrup glycocoll may be tried. Another excellent acidifier is gluconic acid. In some acid resistant patients who have a persistent phosphaturia, the administration of lactic acid cultures, or acidolphilus milk will be of material benefit. All meals should be without bulk.

7. In patients who have an abnormally high calcium excretion the acid ash diet should be used with great caution. If infection is present, a natural ash diet, low in calcium and phosphorus, should be used. Should the patient in question form oxalate stones, a neutral diet should be used and such foods as rhubarb, tomatoes, asparagus, cauliflower and string beans should not be permitted. In these patients buttermilk may be of help. Basic ash diets may be used in the presence of cystinuria and xanthinuria.

8. In those patients requiring continuous bladder drainage, the catheter should be connected to a tidal drainage apparatus. If this is not available, some form of closed automatic or semiautomatic irrigating system should be used. The irrigating solution best suited to these patients is Chute's citric acid-sodium citrate mixture.

9. As soon as the patient can be up and about and as soon as the urinary calcium has become normal, the acid ash diet and large doses of vitamin A should be instituted and maintained for at least two months.

SUMMARY

The importance of calcium excretion in patients who are potential stone formers has been emphasized. Some of the theories and facts regarding urolithiasis have been given with the idea in mind of adapting therapy to such ideas with them. The management of the urinary tract in patients who are made bedfast by prolonged illness has been outlined.

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SULFATHIAZOLE OINTMENT EFFECTIVE FOR IMPETIGO CONTAGIOSA

The average time required to cure 40 patients with impetigo contagiosa, a contagious inflammatory skin disease, by local application of sulfathiazole (a derivative of sulfanilamide) in ointment form was nine and one-half days as compared with from twelve to sixteen days required with the previous conventional treatment, L. H. Winer, M.D., and E. A. Strakosch, M.D., Minneapolis, report in *The Journal of the American Medical Association* for January 17.

The two physicians explain that among the pus producing infections of the skin, impetigo contagiosa is the most superficial and also the most common.

Kissing is responsible for a great deal of heart trouble.

HYPERTENSION (GOLDBLATT): A CLINICO-PATHOLOGICAL INTERPRETATION

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Hypertension (Goldblatt) may be defined as that elevation of arterial tension assumed to be of renal origin and due to either direct or indirect interference with the blood supply to the kidney. In a discussion of this nature the basic pathologic anatomy appears sufficiently important to warrant a brief review as related to vascular renal disease in general.

Vascular diseases of the kidney are often a confusing aspect of Bright's disease in general unless one strictly adheres to the pathological lesions involved. Let us visualize then a kidney cut in frontal section right sided and look at it from behind. We recall the renal artery as a branch of the abdominal aorta coursing laterally at the level of the first or second lumbar vertebra to gain the access to the kidney at the hilum. Here it gives off pre- and retropelvic branches of the first order. These in turn are continuous with the interlobar branches which transverse the cortical columns of Bertini to gain access to the periphery. In the relatively thin cortical area, the interlobar arteries anastomose with the arcuate arteries which are perpendicular to the former and run parallel with the cortical surface. From the arcurate arteries run the interlobar branches which connect directly with the afferent arteriole supplying the glomerulus. The efferent arteriole leaving the glomerulus to supply the adjacent and distal convoluted tubules finally anastomoses with the venules joining the interlobar vein.

Bearing the foregoing details in mind, let us again briefly review the three common bilateral vascular lesions occurring in the kidney, for it is only with a sound basic working knowledge of these that we can properly study the unilaterally diseased kidney as related to hypertension. The first of these is senile arteriosclerotic kidney. Clifford Allbutt, whom Boyd states may be quoted but never imitated, calls it "a starved but not corrupt kidney ample for the smaller needs of the elderly man." This is the kidney which at autopsy may be small, with a flabby cortex, smooth or very finely granular capsule which always strips with ease. Microscopically the lesion is confined to the interlobular arteries and is of the arteriosclerotic type with the usual depositions of calcium, phosphorus and cholestrol salts. As the result of the topography of this lesion only the nephrons supplied by the afferent arteriole from the interlobular artery are involved. Hence the wedge-shaped infarct-like areas show various stages of glomerular, capsular and tubular degeneration, for the interlobular branches are end arteries having no anastomosis or collaterals. This renal lesion is not associated with hypertension.

Next we come to benign nephrosclerosis or the kidney associated with essential hypertension. These are the types of patients who die of cerebral accident, congestive heart failure or coronary occlusion but whose kidneys despite long sustained, moderately elevated pressure, function sufficiently well to avoid azotemic failure.

The pathological lesion in this instance is not in the interlobular arteries but in the afferent arteriole supplying the glomerulus. It consists of a hyalinization of a fibrotic tunica intima. In other words, it is a degenerative process which occurs at the expense of the arteriolar lumen. With decreased blood supply the glomeruli are seen in various stages of damage. The capillaries are first increased in cellularity then fibrosed. Bowman's capsule thickens, the space progressively diminishes and the glomerulus presents a picture of a completely hyalinized corpuscle.

According to Vohardt and Fahr, about ten to fifteen per cent of these cases have a sudden quickening of the tempo of the clinical as well as pathological chain of events. The systolic and diastolic pressure are markedly elevated and here the element of renal failure is a prominent one, uremia being the usual mode of exit. The pathological histology here again involves the afferent arteriole but not in the same fashion. In benign nephrosclerosis, the process was one of hyalinization, that is degenerative change of the intima. In malignant nephrosclerosis, the process is a definitely reactive hyperplasia

Presented before the Section on Medicine, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 21, 1941.

of the intimal layer with sub-endothelial proliferation of collagen and muscle fibrils; in short a hyperplastic arteriolitis which, when having become so severe as to involve its own vasa vasorum develops into a necrotizing arteriolitis, hence the hematuria in our severely nephrosclerotic kidneys. The glomerular picture is similar in type to that previously described but becomes much more extensive as severity of involvement progresses. It is interesting to note that the degenerative and hyperplastic lesions characteristic of these two vascular conditions may be differentially stained. The degenerative hyalinized arterioles stain acidophically; whereas, the hyperplastic elements in the malignant type take a basophilic stain.

Goldblatt working at the Karsner Institute was the first to demonstrate that ischemia of the kidney produced by partial occlusion of the renal artery resulted in elevation of blood pressure in laboratory animals. In the dog, unilateral renal ischemia with the contralateral kidney intact always produced an elevation of systolic pressure which was transient and never progressed to the malignant phase. With rats, Wilson and Byron found that they could produce a permanent damaging hypertension by production of unilateral renal ischemia. This could be clinically abated by removal of the ischemic kidney. With these experiments in mind, I would like to present a case of a clinical corollary of these experiments which happened entirely as a trick of nature. This material was obtained through the courtesy of Dr. Otto Saphir.

CASE

A forty-six year old man who sustained a fracture of the pelvis in an accident six years before death, complained of spells of dizziness three years after the injury, at which time arterial hypertension was first diagnosed. A year before death he was in an automobile accident, and three months later a tumor appeared in the left retroperitoneal space. There was an old history of peptic ulcer. During hospitalization the patient's blood pressure, in millimeters of mercury, varied from 205 systolic and 120 diastolic to 254 systolic and 160 diastolic. The non-protein nitrogen content of the blood varied from 40 to 84 mg. per 100 c. c. Congestive heart failure gradually developed, and the patient died of uremia. Autopsy disclosed an organized thrombus in the left renal artery, but the left kidney showed no changes except a small infarct. The right kidney was the seat of arteriosclerosis of the larger arteries and typical malignant nephrosclerosis (arteriolonecrosis).

There is an embolism in the left renal artery, synonymous with the effect of the experimental clamp, producing the contralaterally granular kidney of nephrosclerosis. Cases as such are of value in themselves only as clinical curiosities, but of tremendous importance in successfully putting to test a basic experimental premise.

Of recent date, shortly after the publication of Goldblatt's first work, Weiss and Parker at the Mallory Institute published some very interesting work on the natural history of pyelonephritis as studied from 100 selected cases with necropsies and also in selected clinical cases. They concluded that a very definite relationship could be established, with a histopathological chain of events traceable in detail between pyelonephritis and an elevated arterial tension.

In an additional study of some 3,000 consecutive autopsies, fifteen to twenty per cent of those deaths occurring from malignant hypertension were found to be on a pyelonephritic basis. Parker classifies pyelonephritis into (1) acute, (2) chronic (active), (3) healed and (4) healed and recurrent. The vascular change of particular histopathological importance, in addition to the interstitial inflammatory reaction with periglomerular fibrosis and tubular degeneration, is the productive hyperplastic and necrotizing arteriolitis characteristic of severe nephrosclerosis. These arteriolar lesions are consistently present in the involved kidney and focally more severe in the areas exhibiting intense fibrosis or scarring. That these lesions were hyperplastic and not degenerative in nature was proven by comparison with the arterioles of the congested lung, the tuberculous kidney, the menopausal uterus and the fibrotic ovary. All the latter revealed the hyalinized degenerative arteriolar reaction.

Finally Weiss and Parker used the following data for evidence of the renal origin of arterial hypertension associated with pyelonephritis:

(1) When hypertension was present the vascular changes were always more marked and diffuse. They were more marked in the scarred areas and in the one sided pyelonephritic cases always on the involved side.

(2) In cases without hypertension, the vascular lesions were of no significance except in the scars where they were slight to moderate. In unilateral pyelonephritis vascular changes occurred only on the affected side.

(3) In unilateral pyelonephritis, if vascular lesions were present on both sides then hypertension was always present.

The bilateral cases were arranged in four groups: (1) Cases with normal blood pressure and without uremia, (2) cases with normal blood pressure and uremia, (3) cases with high blood pressure without uremia and (4) cases with high blood pressure and uremia. In comparing these four it was noted in (1) and (2) that only a slight degree of hyperplastic arteriosclerosis was present. In (3) and (4) however, advanced hyperplastic lesions were found. In the last group a necrotizing arteriolitis was frequently encountered. Of importance was the fact that vascular changes in (1) were identical with those in (3) and (4) but of less extent and severity. The foregoing suggests strongly that the primary vascular changes which later were associated with malignant arteriolitis occurred "before" the initial development of arterial hypertension.

Granted that we have sufficiently well grounded evidence to assume the renal origin of hypertension in certain clinical entities, it is of particular interest to the urologist to know what these conditions are and what the general incidence might be of those most frequently encountered.

Following personal communication with Dr. Goldblatt a chart was prepared of the urological conditions which frequently occurred together with elevation of arterial tension. Maher and Wosika and Mulholland have made important contributions of a similar nature to this work.

1. Upper Urinary Tract
 - A. Perirenal
 1. Chronic perinephritis.
 - B. Intrarenal
 1. Tumors
 2. Pyelonephritis (most frequently encountered)
 3. Polycystic disease.
 - C. Extrarenal
 1. Occlusion of renal artery
 - A. Arteriosclerosis
 - B. Embolism
 2. Thrombosis of renal vein
 - A. Vascular
 - B. Neoplastic
 3. Orthostatic (ptosis)
 - D. Infrarenal
 1. Papillary carcinoma of renal pelvis
 2. Obstruction at ureteral pelvic junction: Strictures, vessels, bands.
 3. Ureteral strictures.
2. Lower Urinary Tract
 - A. Vesical neck obstruction
 1. Prostatic
 2. Bladder neck contracture
 3. Bladder tumor involving ureteral orifice.
 - B. Urethral stricture

The recent voluminous work on pyelonephritis has emphasized the fact that it occurs even more frequently than chronic glomerulonephritis. It has been stated that approximately one-fifth of all deaths from malignant nephrosclerosis were found to be on a pyelonephritic basis.

On the Pathological Service of the Cook County Hospital from 1930 to 1939 there occurred approximately 12,000 routine autopsies. From this group 300 cases of pyelonephritis were obtained. Two hundred thirty-three cases (seventy-four per cent) were bilateral, fifty per cent of which were associated with hypertension, and sixty-seven (twenty-six per cent) were unilateral.

Of particular interest were those unilateral types of pyelonephritis which occurred coincidentally with hypertension. The criteria for hypertension consisted of a heart weighing appreciably over 350 grams or a systolic blood pressure of above 140/90, the latter being the standard set by the American Heart Association. Of the 67 cases with unilateral pyelonephritis, 23 cases occurred with elevated pressure. The ages ranged from ten to eighty-six years, with an average of 54. The sex distribution favored the female in ratio of 12:11. In eight of the 23 cases, unilateral pyelonephritis of the healed contracted type appeared foremost in the anatomical diagnosis and in none of the cases was it diagnosed clinically. In the remainder the coincidental pathology included lesions of the ureter, bladder and vesical neck which were definitely stasis-producing factors.

The difficulties of diagnosis of these cases must be emphasized. It would appear to challenge particularly the urologists, internists and pediatiricians for further refinements in the diagnosis of suppurative renal lesions, especially those of chronic, healed and recurrent types.

Pyelitis in childhood with recurrences in adult life is the one most important obtainable item in the history. Microscopic, chemical and cultured analysis of urine, together with accurate estimation of renal function must be undertaken in all cases. The inulin clearance test has recently been advocated and appears to be of superior value in this regard. Both intravenous and retrograde urography are indispensable as in other types of urologic study, the former to localize the obstruction when possible and the latter for anatomic configuration of the collecting system.

In conclusion, as stated by Weiss and Parker, pyelonephritis was found to be a frequent cause of hypertension (15-20 per cent of cases with malignant nephrosclerosis). In this analysis from Cook County Hospital the incidence of pyelonephritis was 2.5 per cent of 12,000 routine postmortems. Three-fourths of the cases were bilateral and one-fourth unilateral. Fifty per cent of this group were associated with hypertension.

Emphasis is placed upon the fact that only one-third of the unilateral type were accompanied by elevated arterial tension, accounting for less than two per cent of those patients with vascular renal disease and hypertension. Even though these cases constitute only about two per cent of those patients with hypertension, it is incumbent that the urologist do all within his power to sharpen his diagnostic armamentarium and, therefore, effect surgical cure when possible. The urine should be cultured periodically, more especially in those people whose history includes *Previous Attacks of Pyelitis*. Focal infection in throat, chest, gall bladder and sinuses should be adequately treated. The absolute necessity of good urinary drainage should be emphasized repeatedly. To render complete appraisal of a case of this type the following procedures must be borne in mind: (1) chemical, microscopic, and cultural examination of the urine, (2) methods to determine renal function such as divided appearance time of PSP dye, urea or inulin clearance, Mosenthal test and nitrogen retention estimation, (3) both intravenous and retrograde urography. It must be remembered that the diagnosis of a unilaterally contracted and infected kidney especially in a healed stage is often exceedingly difficult. The earlier the diagnosis is made, the sooner the operation performed, the better chance the individual has of becoming permanently well. If the hypertension has existed beyond two to three years lasting improvement is questionable.

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THE MANAGEMENT OF MENTALLY HANDICAPPED CHILDREN

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A mentally handicapped child is one whose growth and development deviates from the average to such a degree that he requires special consideration in in his home, in his school and sometimes from society. It is obvious that this is a broad definition and includes many groups of children. There are a) those youngsters in whom there is a marked limitation of intelligence development with amentia on the one hand or extreme intellectual development with genius on the other hand. As pointed out by Wile[1] "the inferior child, struggling against incapacity and over-demand, is no more a victim than the superior child whose mental gears are not enmeshed in educational dynamics. Among these groups are found an abundance of non-conformists in behavior, retardates, truants, delinquents and neurotics." b) Children with special intellectual defects such as lack of cerebral dominance with poor visual word memory, making it very difficult to impossible for the child to learn to

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Read before the Chicago Pediatric Society, January 20, 1942.

spell and read; c) individuals with a disturbed emotional balance as from the epidemic type of encephalities and d) those with any of these defects and an additional physical handicap. In this paper I wish to discuss particularly that large and important group of boys and girls who are of less than average intelligence and especially the educable mentally subnormal group.

Cerebral agenesis is the most common cause of mental deficiency. Tredgold[2] states that 80% of amentia is due to inheritance. Birth and other injuries, anoxemia, encephalitis, vascular accidents, poisoning (especially lead) and deteriorating diseases are other causes. The etiology is important in giving a prognosis of the mentality of possible offspring.

The attitude of authoritative individuals towards methods of management of (educable) mentally retarded children has changed during the past twenty-five years. In 1912 Fernald[3] called feeblemindedness "the synonym of human inefficiency and one of the greatest sources of human wretchedness and degradation. The social and economic burdens of uncomplicated feeblemindedness are only too well known. The feebleminded are a parasitic, predatory class, never capable of self-support or of managing their own affairs. The great majority ultimately become public charges in some form. They cause unutterable sorrow at home and are a menace and a danger to the community." The psychological, criminological, sociological and educational literature of that period was filled with writings echoing this attitude. The State institution was offered as the logical guardian of these children and the relief of parents and society from them. Gradually these ideas have given way to the obvious necessity of the constructive utilization of the mentally handicapped in the community and to the realization that there are many kinds of work which they can do efficiently.

Fernald was one of the first to introduce this new era for the mentally handicapped. In a follow-up study of all of the individuals discharged into the community from the Massachusetts School for the Feebleminded from 1890 to 1914 he found that 35% were out-and-out failures. He also pointed out that only the most promising were allowed to go home. Similar studies since that time by Matthews, Storms, Folley, Brown[4] and others has revealed that between 21% and 40% were failures; i.e., they became serious behavior problems or completely dependent for support. In other words, the results of training these children in State institutions have not been encouraging.

Another important reason for changing from institutional to home rearing of educable mentally subnormal children is the practical one — that it is not possible to provide State institutions for even a small percentage of the mentally handicapped. No state in the country has been able to provide an institution for as many as 10% of the group. For example, a survey[5] of the Chicago public schools in 1932 by Strayer revealed that there were 21,000 mentally handicapped children of school age in Chicago at that time. It is estimated that there are over 200,000 children in Illinois with varying degrees of deviation from the normal. Furthermore, it is the higher grade of subnormal (those that have seldom been considered institutional cases) who need the most specialized attention and this help has always been recognized as a community problem.

The relationship of mental retardation to delinquency has been demonstrated many times. In a study of 1000 male juvenile delinquents in the Boston Juvenile Court, Glueck[6] found that 28.2% were dull, 17.1% borderline and 13.1% feebleminded, making a total of 58.4% who were mentally retarded. This is a far higher proportion of children of lower intelligence among delinquency groups than in the general population. In their studies of male and female delinquents, Glueck and Glueck found that 78.9% had been retarded two or more years below the school grades normal for their ages. Wile[7] quotes the following figures, giving the percentage of delinquents who were mentally retarded: 37.8% in Boston in 1937; 29% in New York in 1932; and in Chicago in 1923, 58.6% of the 14 to 15 year-old boys going through the Boys' Court were retarded two or more years.

No one knows the percentage of those individuals who are dependent upon society for support — the relief load in normal times — who are mentally retarded.

The figures quoted above do not prove that mental retardation, *per se*, is the cause of delinquency or dependency. These problems may result from mental retardation but more often they are symptoms of social maladjustment; they are signs of serious personality disorders which are on an emotional basis more than due to intellectual defect. When we consider the fact that mentally deficient children are usually rejected and suffer the consequences of disturbed parental attitudes, and if it is recalled that they are generally denied the opportunities in school which gives them the satisfaction of accomplishment enjoyed by normal children and that after repeated school failures they are untrained for any kind of employment, we see the reason for personality difficulties which might result in delinquency or dependency. From a study of individuals by Shimberg and Reichenberg,[3] it was found that those mentally retarded individuals with poor personality traits made a poor adjustment while those with good personality characteristics were far more successful. In this conclusion we recognize a similarity between the mentally handicapped and normal individuals; that is, adjustment in society depends upon normal emotional growth and development more than upon any other factors. Since the mentally handicapped have more serious environmental obstacles to meet than normal children, their emotional problems are greater and there is more maladjustment among them.

If we define a healthy individual as one who is able to use his resources and capacities in the most efficient manner in order that he may enjoy the greatest possible accomplishments for himself and society, it becomes obvious that an individual who is retarded mentally can enjoy physical and mental health. The problem, then, is to provide these children with the environmental needs for reaching a maximum growth and development. Here again the general determinants for mental health are similar to those for normal children.

The first essential for mental health is security in parents. This is the feeling that is given a child by parents who accept him as he is even though they may not be satisfied with him. Lack of affection of this quality is the biggest obstacle to mental health for mentally defective children. It is very difficult for parents to accept a mentally retarded child. Whether it is a rejection on a biological basis, their fears that the child will not be a credit to them, or the fear for the future welfare of their defective offspring, parents reject such a child and react to him by over-protection at some times, and over-correction in the effort to force him to act like a normal child at other times. It follows, then, that the earlier a diagnosis of mental deficiency can be made and the more parents can be helped to accept the situation, the greater will be the security that they can give the child. Parents, especially mothers, know when their babies are not normal; they are seldom fooled.

The infant who is hopelessly retarded should be placed in a public institution or under private care before the mother leaves the hospital. This should be done to protect the mental health of the parents and of the other members of the family.

Further security can be given the mentally handicapped child if he is accepted in the community and the school. Most teachers resent this type of a pupil and make every effort to rid their classes of them. The reasons for this attitude on the part of school teachers are probably the same as those of parents. There are the additional reasons that teachers are commonly held responsible for the child's failure to progress and the public lauds the teacher who can demonstrate the best learners.

The second essential for mental health is but a corollary to the first and is expressed in allowing the child to grow up according to his own patterns. This is accomplished by understanding the youngster's growth pattern and gauging expectations to meet his ability so that he can get satisfaction from learning to do things up to the limit of his capacity. As pointed out by Healy[8], when expectations from a child exceed his ability he reacts by over-compliance on the one hand or over-defiance on the other. These reactions, based on insecurities and accompanied by fear and resentment, lead to dependency or delinquency.

It is generally recognized that mentally handicapped children require especially trained teachers and special educational facilities. It is also accepted that State programs with special aid

to cooperating local school systems can best supply that training. Some states, notably Massachusetts and New York, have had programs for many years. More recently Pennsylvania, Wisconsin, Ohio, Michigan, California and finally Illinois are developing programs to meet this great need. Their programs vary in detail but follow the general principles that the children who are kept in their homes or in suitable boarding homes and have individual programs in school based on their individual capacities and scholastic needs develop the greatest mental health.

There are several types of education for handicapped children. There are those who can continue in regular classes in schools with a special consideration from teachers. Those children with more marked handicaps do best in special classes in regular school systems. — Especially when they reach the age at which vocational training is indicated, special schools in regular school systems may offer the greatest advantages. Finally there are those children with such marked handicaps — intellectual, emotional or both that they must be cared for or trained in state institutions.

A further aid to the mentally handicapped may be offered by a state protectorship set up with state funds for such special supervision, training and treatment as the child may need. This protectorship should be in cooperation with the parents, community and local school systems. It would relieve a great deal of anxiety which exists in the minds of parents relative to the welfare of their handicapped child after they can no longer supervise his welfare.

When children have security and are allowed to grow up according to their own patterns, they develop habits of self reliance which give them the self confidence and courage to face problems and solve them. Good habits are developed by doing the things they want to do. Health habits, play habits and habits of industry unconsciously develop while children are following a program adapted to their individual abilities and emotional needs. They accept responsibility for their behavior up to the limit of their mental capacity. Even though they do not have the intellectual capacity to do the abstract reasoning and complicated thinking of normal individuals their emotional growth is usually normal and they accept adults' norms of right and wrong to a remarkable degree.

Finally, mentally handicapped children need a place in society. In order to have security in their parents and community, as well as sufficient confidence in themselves, and to get satisfaction out of doing things they are able to do, it is necessary for them to feel that there is something they can do well and to feel that they are needed in society. After they have been trained in school to do a certain type of work, the cooperation of labor organizations and industry are necessary in order that they can find employment.

In any large program of this kind there will always be some children who can not grow up successfully because of home conditions. Supervision by public agencies is necessary in some cases and others require boarding homes; others will develop unmistakable signs of delinquency and may have to be placed in a State institution. The large majority, however, can have mental health and lead useful and happy lives.

SUMMARY

1. A mentally handicapped child is one whose growth and development deviates from the average to such a degree that he fails to make an adjustment in his home, in the public or private educational institution and (or) in society.

2. It is now generally recognized that educable mentally handicapped children should be reared in their homes rather than in State institutions. State institutions are for uneducable children and for those who become uncontrollable behavior problems.

3. While there is a relationship between mental deficiency and delinquency and dependency, the etiology is primarily emotional rather than intellectual. Mentally handicapped children do not have the environmental advantages of normal children and therefore develop emotional difficulties more frequently.

4. Mentally retarded individuals can have mental health as well as can those with normal intelligence.

5. Mental health is based on security in parents and on allowing children to grow up according to their own individual patterns. Chil-

dren then form habits of self reliance which give them confidence in their ability to face difficult situations.

6. It is generally accepted that mentally handicapped children require especially trained teachers and special facilities in the school systems.

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TREATMENT OF FRIEDLANDER'S SEPTICEMIA BY SULFADIAZINE WITH RECOVERY

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Medical literature contains reports of Friedlander's Septicemia associated with infection in the lung,[1, 2] and peritoneum following intestinal perforation,[3] of the biliary tract[3] or the liver,[4] of the genito-urinary tract,[3] and less frequently of the middle ear or sinuses.[3] Sixteen cases of B. Friedlander's Bacteremia were reported in 1937 by Baehr, Schwartzman, and Greenspan,[5] of which four recovered. Twelve of these cases developed from the biliary or urinary tract. One fatal case reported from Massachusetts General Hospital was treated by sulfapyridine followed by sulfanilamide;[5] at autopsy multiple abscesses of the liver and healed pulmonary tuberculosis were noted in addition to the septicemia. In October 1939, Meyer and Amtman[6] reported a proven case of Friedlander's Septicemia with portal of entry undetermined, which was treated with sulfapyridine and ended in recovery. In a review of world literature, they found this type of septicemia to be rare and the majority of cases reported were in French medical literature.

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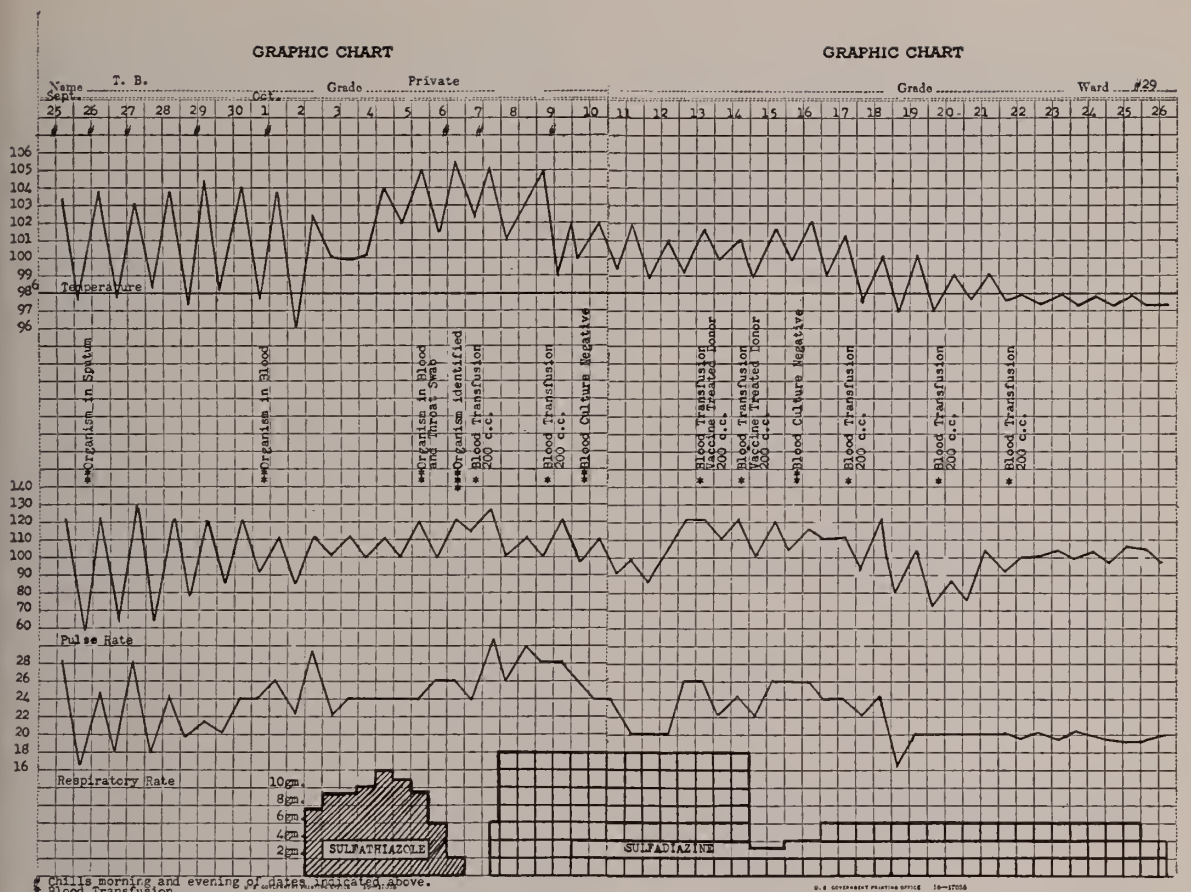
CASE REPORT

T. B., a soldier of Spanish descent, aged 27, entered the hospital September 25, 1941, complaining of recurrent chills and fever, followed by profuse sweats which had occurred twice daily since his induction, September 23, 1941. These symptoms were associated with a loose, irritating, non-productive cough, stuffy nose, tightness in the chest, headache, dizziness, and nausea without vomiting. Past history was negative except for gonorrhea, self-treated, during the summer of 1941. He appeared toxic with temperature 103.6° F., pulse 120, and respirations 28. On physical examination, there was intense redness of the conjunctiva and nasopharynx, dullness over the left upper chest and abdominal distention. He now weighed 115 pounds, having lost approximately 15 pounds in the past two days. Complete blood count and differential smear was normal. The urine was negative except for 1 plus albumen. X-ray film of the chest, made with bedside machine, revealed the lung fields to be clear except for a few calcifications. He produced a small amount of sputum which contained organisms resembling pneumococci, but these could not be typed.

During the first week in the hospital, he had a chill twice daily, usually morning and evening, but not at the same hour. The chill, which lasted 15-60 minutes was always followed by a fever of 103°-104.6° F. and profuse sweating. In between the paroxysms the temperature was usually below 98° F. and he appeared surprisingly well. Smears made for malaria showed no parasites. Examination of the prostatic secretions and urine showed no organisms. The left upper chest remained dull on percussion, profuse dry rales were heard through that area, and in the bases of both lungs, but a repeated x-ray study showed no acute disease. He appeared more toxic, was nauseated most of the time, markedly constipated, and complained of abdominal distention, but was able to take an abundance of liquids and nourishment between paroxysms.

October 1, the laboratory reported organisms in the blood culture which were short-lived and could not be completely identified, but appeared to be a gram negative diplobacillus. That day, after two especially violent chills, and temperature remaining constantly above 103° F., sulfathiazole was started with 4 grams, followed by 2 grams in four hours, and 1 gram every four hours, day and night. The drug caused some increase in nausea but did not change the clinical picture. The leucocyte count increased to 12,000 after 48 hours of drug administration with a blood level of 1.77 mgs. percent free sulfathiazole, and the dose was increased to 2 grams every 4 hours. There was an increase in the severity of the cough and amount of sputum; however, laboratory studies showed only a mixed infection.

The patient was more critically ill and acutely uncomfortable on the fifth day of sulfathiazole ther-



apy, and the drug was discontinued after he had received a total dosage of 39 grams and a blood level of 10.4 mgs. percent free sulfathiazole. Intermittent chills continued and the temperature was constantly between 101.5°-105.5° F., with pulse rate 120 and respiration 28 per minute. The liver was enlarged to about four fingers breadth below the right costal margin and there was a roughening of the first sound at the apex of the heart, with a soft blowing systolic murmur heard best in the fifth interspace at the left nipple line.

On October 6, the hospital laboratory reported the isolation of Bacillus mucosus capsulatus (Friedlander's Bacillus) from a profuse growth in blood broth culture. With appropriate sera, this was determined to belong to Group A. Smears made from the nasal pharynx and sputum contained a similar organism. A transfusion of 200 c.c. compatible whole blood was administered on the morning of October 7, and sulfadiazine was started at 3:00 P.M. with an initial dose of 3.5 grams, followed by one gram every two hours night and day. The red blood count was reduced to 3.4 with leucocytes 6,200 after 24 hours of drug administration. He received the second blood transfusion and these were repeated every two days until a total of seven had been given. The donors of blood for the third and fourth transfusion received a killed vaccine made from the organisms which had been isolated from the patient's blood. The temperature was constantly between 101°-103° F. until October 9, when he had a violent chill at the end of a transfusion of blood from a compatible donor (not vaccine treated). The chill was followed by fever of 105° F., marked prostration, and a generalized urticaria with intense itching suggesting passive transfer of allergin. The blood culture showed no growth on October 10, or thereafter. The paroxysms of chills, fever, and sweats disappeared after 48 hours of sulfadiazine administration and definite clinical improvement was noted. The temperature and respirations became normal on October 22 and four days later, the drug was discontinued. The increased pulse rate and the heart changes noted diminished gradually becoming normal within the month.

SUMMARY

Review of medical literature shows that septicemia resulting from Friedlander's bacillus is rare and recovery infrequent.

One case was reported in which chills, fever, and sweats persisted after five days of massive sulfathiazole therapy, but recovered following 18 days of treatment with sulfadiazine, plus seven whole blood transfusions. Two of the blood donors used had been given autogenous vaccine.

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PAINLESS EXTRACTION OF TEETH NOW IS REALITY, DENTIST SAYS

Modern Dentistry Has Largely Eliminated The Discomforts of the Past, Writer Says in February Issue of Hygeia

"The pain and discomfort associated with the extraction of teeth in the past has largely been eliminated by modern dentistry and by careful cooperation between patient and dentist," R. Reed Smith, D.D.S., Springfield, Mo., declares in *Hygeia, The Health Magazine* for February. "By the judicious selection of anesthetics, dentistry today can render the extraction of teeth and other operations about the face and mouth absolutely painless."

The two methods which Dr. Smith recommends by which dental operations are rendered painless are gas and local anesthesia. He cautions, however, that since there are some definite contraindications for the use of gas, the patient should never insist on its administration if the dentist considers a local anesthetic advisable.

"Local anesthetic (blocking) is used far more extensively than gas," he explains, "and great improvements have been made both in the drug itself and in the method of injection. Novocain is the drug that is usually preferred; a good nerve block with the new novocain solutions will completely block out pain and, what is of equal importance, do it with absolute safety. These new drugs do not cause a rapid change in blood pressure as the older solutions sometimes did. . . . Every dentist has access to several new and potent solutions known as topical or surface anesthetics. In most cases this surface anesthetic is swabbed on by a little cotton applicator, and in two or three minutes the needle may be inserted without any pain."

The writer advises that the patient should allow his dentist to make an x-ray of the teeth before extraction, since if the teeth are diseased the x-ray will indicate the exact area of infection. In addition, it will reveal to the dentist the definite positions of the roots and the density of the bone holding the teeth.

"Do not wait until you are driven to the dentist by pain and soreness," Dr. Smith warns. "The entire extraction procedure can be performed with a minimum of pain if it is started when the gums are in good condition. If they are sore and painful, however, your dentist may decide to treat them to remove as much of the inflammation as possible before actually starting the extractions.

"Do not ask for many teeth to be removed at one sitting! The extraction of too many teeth at one time is a shock to the entire nervous system.

"After extraction, it is important to follow instructions closely. . . . Your condition calls for a certain procedure, and if you are advised to use a mouth wash, cold packs and sedatives instead of heat and stimulants, follow this advice the letter. The pain and discomfort associated with the extraction of teeth in the past has largely been eliminated by modern dentistry and by careful cooperation between patient and dentist.

"There are still many people who do not know that a new plate may be made and ready to set just as soon as the extractions are finished. Plates may be placed in the mouth immediately with success, and the patient's friends need not see him without teeth. Strange as it may seem, gums do not become sorer under the immediate set of dentures than they do when left open. In fact, many dentists think that immediate plates serve

as a splint and really help the gums to heal as they should. . . . Ask your dentist about immediate dentures before the extractions start. In only a few cases is this procedure not feasible."

VITAMIN B FLAT

At a recent concert the Chicago Symphony Orchestra performed a hitherto unheard composition bearing the modest title "Two Symphonic Impressions." The composer, Carl Eppert, is a native of Indiana, at present a resident of Milwaukee and winner of the first prize in a competition offered by the Orchestral Association in connection with the Golden Jubilee of the Chicago Symphony Orchestra. The award was made by John Barbirolli, conductor of the New York Philharmonic-Symphony Orchestra; Eugene Ormandy, conductor of the Philadelphia Orchestra, and Deems Tayolr, composer and critic. Of particular interest is the fact that the music was inspired by the vitamins. According to the program notes the composition was originally intended as music for a ballet whose choreography was based on a battle between preventive medicine and disease. The introduction was to be descriptive of the discovery of vitamins; one portion was to represent vitamin A and another the antirachitic vitamin D. The listener was asked to envisage a rachitic cripple restored to health and shapely legs by the administration of the proper vitamin. In the past, creative artists were preoccupied with the passions, struggles, triumphs and defeats of men. Perhaps there have been symphonies and concertos before now which reflected disease. Probably, however, this is the first time one of the most abstract of all arts has been chosen for its inspiration the discovery of vitamins and the conquest of deficiency diseases.—*A. M. A. Journal, July 5, 1941.*

MENTAL HEALTH AND THE GENERAL PRACTITIONER

Urging the adoption of a comprehensive program for civilian mental health, Mr. Watson B. Miller, Assistant Federal Security Administrator, recently addressed a group of psychiatrists, according to the *Annals of the District of Columbia.* He stated that "psychiatric knowledge already far outstrips its application. Much more can be learned, and will be learned as greater attention is paid to research in nervous and mental diseases. Psychiatry in the United States is far more advanced than in any other country Yet there are in the United States today only 3,000 trained psychiatrists

"What is more disturbing, medical education has not equipped general practitioners to recognize mental disease in its early stages, nor to apply psychiatry in the treatment of a very large number of their patients whose bodily ailments are clearly psychic in origin. Yet, it is impossible to see how we can make further progress in mental hygiene without the informed interest of the general practitioner. It is he who first sees the great majority of incipient cases; it is he to whom the neurotics turn with their subjective symptoms, very real to them, for which he can find no demonstrable physical cause

"Not only the major share of case-finding but even a part of treatment can be done by the well-trained general practitioner. The psychiatrist should be regarded as the consultant and the specialist in the treatment of mental disease."

TRANSFUSIONS

As long ago as the last war it was stressed that blood-pressure readings constitute the most reliable means of estimating the degree of secondary wound-shock. The pulse rate is a *less sure* guide to the severity of the condition, for its frequency may not increase as the blood-pressure falls. Simple hematologic investigations constitute a useful check on blood-pressure readings as an index of diminished blood volume, and their employment furnishes an additional guide as to the amount of fluid which should be transfused.

When a known volume of plasma is rapidly added to an unknown volume of blood, the total volume of red cells in circulation is obviously unaltered, provided that hemorrhage has ceased. The red cells are therefore able to act as an index of the amount of dilution effected by the transfusion. The subjacent formula will give the *blood volume prior to transfusion:*

Volume = volume transfused × new hematocrit reading.

Difference between hematocrit readings before and after transfusion, and by assuming a normal adult blood-volume to be between 5 and 6 liters according to physique, the amount of fluid lost from the circulation can readily be estimated. Observations have shown that when the calculated loss of fluid from the circulation is restored to the extent of 50%, or more, the effect of the transfusion on the blood pressure is usually satisfactory. This 50% replacement of fluid must be the protein content of the transfusion, since this is the portion that will remain in the circulation. The crystalloid portion of the transfusion comprising the anticoagulant fluid is invariably excreted quickly.—*Rear Admiral Gordon Gordon-Taylor, M.S., F.R.C.S., F.R.A.C.S., The Practitioner, July,* 147: 448-462, 1941.

Science is a balance between speculation and authority.—*Louis Hamman, M.D., Baltimore.*

The elderly tuberculous are more dangerous to their grandchildren than to their children. A. Morland, M.D., Tubercle, Apr. 1941.

Clinicopathologic Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY
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CASE 1 — RUPTURE OF THE AORTA

Dr H. E. Dorton: — This patient, a 64 year-old janitor, was working on a furnace cleaning the ashes and suddenly felt an agonizing pain. He was, however, able to return from work to the "L", where he collapsed. He was brought to the hospital by a police ambulance in a state of shock, suffering terrible pain in the lower chest and with complete paralysis of the lower half of the body, also anesthesia. His blood pressure was not readable, pulse almost imperceptible.

Fifteen years ago, the patient had hemorrhoids treated at a clinic, some complicating condition caused local doctors to decline to operate. He was told there that paralysis of the legs might develop in time if untreated; he returned twice for treatment. The walking gait has been slowing noticeably since that time.

For three years there have been frequent very severe headaches, for which he took a great deal of aspirin.

During the past two to three months he has been troubled by difficulty in controling his legs, with occasional buckling of the knees and staggering.

Above information was obtained from the daughter, who is, however, unable to give a detailed inventory of his past history.

Patient was in extremis, stuporous, with only occasional rousing.

Physical examination disclosed an aged, moribund, stuporous male. The pupils were small and equal. The neck was stiff. The lungs showed moist rales in both bases. Heart tones were irregular, soft, and distant, very rapid. The blood pressure was 106/70. There was a complete paralysis and anesthesia of the lower trunk and lower extremities. Patient was comatous and only occasionaly responded to questions.

The x-ray showed bilateral bronchial pneumonia, particularly on the right lung and no spinal fractures.

Patient was put to bed, absolute rest ordered, supportive treatment given.

Clinical diagnosis was spinal cord lesion and pneumonia.

The next morning the patient was in complete vascular collapse, ashen, cyanotic, pulse imperceptible. Blood pressure was unobtainable. Moved head, neck and upper extremities well, but was unable to move from the waist down. Abdomen and cremasteric, as well as knee jerk, ankle, and plantar reflexes, all abolished. Pupils, 3 mm., did not react to light. He complained of terrific pressure and pain substernally and in the neck. Heart tones very muffled and distant but regular.

Diagnosis — Major coronary occlusion; to rule out adrenal apoplexy and dissecting aneurysm of thoracic aorta (no pulse felt in lower extremities).

After the administration of ¼ grain morphine sulphate intravenously, 400 cc. of 25%

glucose intravenously, and intranasal oxygen, together with the elevation of the foot of his bed and application of heating blankets, patient's condition was much improved. Blood pressure was 78/0, pulse at wrist 110.

The next day, after the patient had recovered from shock and was able to give a history, it was revealed that for the past few weeks he had been slowing up in his gait and having difficulty in controling his urine — also numbness in the feet was noticeable.

Present episode happened suddenly in the early morning with terrific pain in the anterior shoulders and chest with immediate weakness of legs. In the ensuing hour patient lost complete control of his legs.

The laboratory tests were essentially negative.

Examination — Revealed complete anesthesia from third and fourth thoracic segment and xyphoid down.

Diagnosis — Probable hemorrhage into a cord lesion at third and fourth segment.

In the course of the next two days the patient suffered from an increasing respiratory difficulty and ultimately succumbed to it.

Autopsy — The body is that of a poorly nourished man about 65 years of age. There are superficial abrasions over the iliac crest and lower chest on the left side the size of a silver dollar each. There is a considerable widespread cyanosis of the entire skin and visible mucous membranes. The head, neck, and upper extremities appear to be somewhat swollen and exhibit particularly striking cyanosis.

Anatomic Description and Diagnosis — The brain appears wet. The convolutions are rather atrophic. The sulci are deep. There is an increased amount of fluid in the subarachnoidal spaces. On cutting the brain after formalin fixation for two days no foci of softening, hemorrhages or other changes were noted.

The cerebral arteries appear to be in the stage of moderately advanced atheromatosis throughout.

The microscopic examination of the brain reveals only widespread arterio- and arteriolosclerotic changes.

On opening of the spinal cord there are numerous foci of ossification in the form of sharp spicules particularly affecting the upper spinal region. The spinal cord appears to be well preserved throughout. No hemorrhages or tumors were found.

Microscopic examination of the cord at a score of different levels, about 20 in all, shows a good state of preservation of nerve cells and nerve fibers. There are numerous hyalin globules on all sections.

The arteries, particularly those of the small caliber, appear to be sclerotic throughout.

The heart is covered by a large pericardial blood clot, having the form of a pancake, which distends the pericardial sac, and compresses the heart. Its total weight is about 400 gm. On opening of the heart there is a rupture of the aorta in the form of a zigzag horizontal line about 3 cm. long. This line is located about 2 cm. above the semilunar valves. At the point of this tear there is some separation and folding of the intima and a rather large blood clot is firmly adherent to the line of rupture. Dissecting aneurysm, originating from this tear, spreads over the arch of the aorta, pulmonary vessels, and in the mediastinal structures reaching 1-2 cm. in thickness. It extends into both lungs affecting practically the entire right lung and the lower lobe of the left lung and causing a very peculiar picture.

The lungs are small, well contracted, very firm, and contain but little air. The microscopic examination of the lungs discloses massive widespread interstitial hemorrhage extending throughout the entire lung parenchyma, compressing and partly filling the alveoli. The lower limit of the dissecting aneurysm is about the level of the diaphragm. It does not extend below the diaphragm.

The heart is rather small, well contracted, greatly compressed by the above described pericardial blood clot.

The myocardium shows on microscopic examination rather advanced lipochrome atrophy. The coronary vessels are tortuous, sclerotic, but the lumen appears to be patent everywhere.

The liver is rather small, weighs about 1,000 gm., is brownish in color. On the cut surface the pattern of the lobules appears slurred and indistinct.

The gallbladder is moderately distended, contains thick, viscid bile.

The spleen is large, soft, weighs about 250

gm. The pulp strips off in large amounts. The capsule is thick and wrinkled, — acute splenitis.

The pancreas and the suprarenal glands show no marked pathologic changes.

The kidneys weigh about 120 gm. each. The capsule is firmly adherent. Upon removal a considerable amount of kidney parenchyma remains attached to the capsule and the surface then appears granular. Each kidney contains a few cortical abscesses 5-8 mm. in dimensions. Thus we have a picture of an advanced arteriosclerotic nephrocirrhosis with fresh spread of an ascending urinary infection causing disseminated abscesses in the cortex.

The urinary bladder shows very advanced suppurative cystitis. Its wall is thick, edematous, and covered by a thick layer of creamy, dark brown pus. Bacteriologic examination of this pus shows profuse growth of Escherichia coli identified on differential sugar media.

Prostate was normal in size.

The gastric mucosa appears atrophic, flat. The folds are few and far between. The mucosa of the small and large intestines shows advanced cyanosis.

There is a moderate atheromatosis of the aorta and of the large vessels while the cerebral and coronary vessels show rather advanced arteriolosclerotic changes.

Summary — Aged, poorly nourished man, has suffered decompensated kidneys (persistent headaches) and arteriosclerosis of the spinal cord vessels (disturbances of gait).

He undertook excessive physical exertion which led to the transverse rupture of the aorta at the site of predilection and a dissecting aneurysm (which should better be called dissecting hemorrhage) extending in the mediastinal structures, lungs, and into the pericardial sac (hemopericardium) causing compression of the heart. An additional factor here is an Escherichia coli cystitis with cortical abscesses in both kidneys.

Dr. L. Saxon — As soon as the rupture of the aorta was discovered, the coroner's office was notified and the rest of the autopsy was done in cooperation with the coroner's physician.

Question — What accounts for the paraplegia?

Answer — The gait disturbance was of some duration, about 15 years. It should be explained on the basis of arteriosclerotic changes in the spinal cord.

Question — The diagnosis of rupture of the aorta appears on the clinical chart. How did you make it?

Answer — We have mentioned this among other possibilities. Absence of the pulse in the femoral arteries could have been caused by compression of the abdominal aorta by dissecting aneurysm. As it turned out, there was no such compression and the circulatory collapse plus hemopericardium was responsible for the lack of peripheral pulse.

Question — What about the cystitis? We had quite a few such cases lately.

Answer. (Chairman) — Let us take this up with the next case.

CASE 2 — THYROTOXICOSIS. PSEUDOMEMBRANOUS CYSTITIS.

Dr. J. W. Barnett — The patient, a white woman 53 years of age, has been suffering with a thyrotoxicosis for several years. A month prior to admission she had an attack of acute substernal and precordial pain. There was a painful sensation of compression of the chest lasting for 24 hours. The pain disappeared the next day but precordial tenderness persisted for several hours. The patient was placed on iodine, digitalis treatment, and bed rest.

She had a similar attack about two years ago, at which time she had no medical attention and recovered in the course of about one week. A day before she had another attack of severe pain in the epigastrium which lasted all day. Sleep was induced by sedatives and the next morning she had but mild discomfort.

She has had a large goiter of diffuse type since childhood and has been treated from time to time by iodine, rest in bed, etc.

Clinical examination disclosed a middle-aged female, acutely ill, showing a symmetrically enlarged thyroid. She has an enlarged heart, the left border extending to the midaxillary line, with systolic murmurs in the mitral and aortic areas. She exhibited regular tachycardia.

Pulse was 98, blood pressure 146/60. The other organs were essentially negative. Basal metabolism was +40, her weight 164 lbs. White count varied between 10 and 12,000. Electrocardiogram was interpreted as showing numerous auricular extrasystoles, partial heart block, and myocardial degeneration.

An operation was deemed advisable but obviously she was not in the proper condition so she was discharged but kept in bed with Lugol treatment, placed on a high carbohydrate diet with a liberal supply of Vitamin B.

A month later she was re-admitted to the hospital for thyroidectomy somewhat improved even though she still remained a questionable operative risk. Her urine at this time showed a specific gravity of 1.014, slight trace of albumin, a few red blood cells, 18-20 pus cells/H.P.F. on centrifuged specimen. Basal metabolism rate fell to +20. Blood count showed 8,300 white blood cells and 4,300,000 red blood cells, with a hemoglobin of 82%.

An x-ray of the chest showed no essential pathology and only a moderate enlargement of the heart.

Before the operation she was given a blood transfusion of 500 cc. Thyroidectomy was performed in the regular way. Pulse during the operation was 120-145 and she took an anesthetic rather poorly. The operation was followed by another blood transfusion and the next day two more blood transfusions were given.

Microscopic examination of the thyroid showed a nodular granular mass weighing about 340 gm. The glands were distended with colloid with accumulations of interstitial colloid. Epithelium was cuboidal. Nests of lymphocytes and extensive foci of hyalinosis. Diagnosis was adenomatous goiter.

Her temperature, which was normal prior to the operation, rose from 99° to 104°. Her pulse rose from 100 to 140 and then dropped to 120. Respirations were around 20 rising during the next few hours to 40. She died four days after operation.

Dr. E. C. Piette — Moderately well-nourished woman about 60 years of age; thyroidectomy 4 days ago, slight anasarca, moderate pallor.

Anatomic Description and Diagnosis — Hyperemia and edema of the brain. Advanced edema of both lungs, foamy fluid oozes freely down the surface made by cutting. Marked distention of the right heart (tricuspid allows seven fingers); high grade fragmentation and parenchymatous degeneration of the myocardium.

Advanced fatty infiltration of the liver. Its weight is about 1200 gm. Cholelithiasis.

The gallbladder is small, encloses tightly two round calculi 1.5-2 cm. in diameter, respectively. Advanced acute infectious swelling of the spleen, weight about 250 gm.

Advanced parenchymatous degeneration of both kidneys, weight about 450 gm.

Widespread pseudomembranous cystitis, urinary bladder mucosa is black with yellow-greenish plaques. Bacteriologic examination, including passage through sugar media, shows Escherichia coli. Numerous intramural fibromyomata of the uterus 1-2 cm. in diameter in the fundus. Polyposis of the endometrium in the left horn.

Hemorrhagic infiltration of the upper and anterior mediastinum. Petechial hemorrhages of the small intestines.

Summary — Thyrotoxic patient with severe pseudomembranous cystitis has succumbed to pulmonary edema. The most important feature of the case is a widespread advanced cystitis which came as an unexpected surprise.

Dr. E. F. Traut — The diagnosis of cystitis, obvious in most instances, may at times be quite difficult. The urine examination frequently fails to disclose marked increase in pus cells. At the autopsy one sees why: The pus is thick, clings to the wall, and is not carried away by the overflow of urine, just as the water in a brook is clear even though the bed is muddy.

Dr. W. J. Potts — The problem of cystitis, particularly of postoperative cystitis has worried me a good deal. I know how difficult it is to make this diagnosis. There is only one other enemy of a surgeon of equal importance — postoperative pneumonia. The patient after an operation cannot be subjected to a thorough physical examination indiscriminately. We must conquer them if we are to reduce the postoperative mortality.

Another point, patients over fifty may have pneumonia without fever.

Dr. F. Ronayne — The x-ray examination, even with a portable outfit, may give the information desired.

Dr. C. O. Miller — From the standpoint of a urologist who has notoriously poor risks in most instances, I have been following our autopsies with greatest anxiety. I have decided

now to give most of my patients suitable form of chemotherapy pre-operatively and to date the results are encouraging.

CASE 3 — ADENOMA OF ISLANDS OF LANGERHANS; CEREBRAL HEMORRHAGE

Dr. F. A. Anderson — Patient is a white female 65 years of age. Her son stated she suddenly lost consciousness about 5:00 P.M. Prior to that she was in good health except for high blood pressure for the past five to ten years.

Physical examination disclosed an elderly, obese woman, in a coma breathing regularly and easily, who responded to painful stimuli. Her head showed no evidence of injury. The eyes exhibited side-to-side movement. The pupils were pinpoint. The chest showed noisy rales due to pleural secretion. The rate was good as was the rhythm. Tones were distant, aortic second was accentuated.

The blood pressure was 220/110. The abdomen showed extreme obesity and no tenderness. The right leg and arm were in a state of complete spastic paralysis. Reflexes were increased. On the left side the reflexes were diminished. Pathologic Babinski reflex on the right side.

Both legs are discolored by varicosities. The ankles disclosed soft, pitting edema.

The examining room diagnosis was cerebral vascular accident, hemorrhage with right hemiplegia, cardiorenal disease, rule out uremia.

The urine showed a faint trace of albumin, with a good specifiic gravity of 1.028, 2-3 pus cells/H.P.F. on centrifuged sediment and an occasional hyaline cast. The total non-protein nitrogen in the blood was 42 mgm. per hundred cc.

The patient stayed in the hospital for five days. Her temperature, axillary, rose from 99° to 104°, the pulse from 90 to 140, and the respiration from 20 to 40 during this time.

The relatives insisted upon performance of the postmortem in order to establish definitely that she was not the victim of foul play.

Dr. E. C. Piette — An extremely obese woman, 68 years of age, weighing about 260 lbs., with pronounced postmortem discoloration of the skin and the dependent parts.

Anatomic Description and Diagnosis — The bones of the skull are quite thick, diploe is well developed. There is no evidence of skull fracture. The brain weighs about 1400 gms. The convolutions on the right side are well developed. On the left side they are flattened out. The cortex on the left side bulges outward and its consistency is soft.

On cutting into the left hemisphere a large area of hemorrhage is disclosed, measuring about 12 x 5 x 5 cm. and destroying completely the internal capsule and the left central ganglia. The cerebral vessels are sclerotic, show very numerous hard plaques throughout.

Both lungs are free from adhesions, are dark brown in color — chronic passive congestion.

The heart is distended, particularly the right ventricle and the right auricle. The heart muscle is extremely soft, clay-colored, contains numerous hemorrhages, particularly in the region of the septum.

The liver weighs about 1200 gm., is bluish in color — chronic passive congestion.

The gallbladder is small, contains an impacted stone in the cystic duct and colorless viscid mucus inside — hydrops.

The spleen weighs about 150 gm., is bluish in color, its consistency is increased — chronic cyanotic induration.

The kidneys weigh about 140 gm. each, the capsule strips readily, the consistency is somewhat increased. The color has a bluish tinge — chronic passive congestion. In addition, there are several soft, yellow nodes in both kidneys measuring 0.5 to 1.5 cm. in diameter — multiple cortical adenomata.

The pancreas weighs about 75 gm. About 1 inch proximal to the tail end of the pancreas on the upper surface of the pancreas is a discrete and encapsulated tumor measuring about 1 cm. in diameter, partly cystic on the cut surface — adenoma of the Langerhans Islands.

Miscroscopic examination of the tumor discloses briefly, a typical picture of a benign Langerhans Island adenoma. The cells are mostly cuboidal in outline, their nuclei vary in amount of chromatin. They form cords or clumps and the cytoplasm is faintly acidophilic. There is no evidence of advanced anaplasia nor any aggressive infiltrative growth.

The suprarenals show an increased amount of lipids in the cortex.

The uterus is rather large, weighs about ½ lb., contains numerous intramural and subserous pedunculated growths measuring 1-5 cm. in diameter. The right ovary is transformed into a conglomerate of two cysts, 2 and 5 cm. in diameter, respectively—follicular ovarian cysts. The left ovary is small, firm, fibrous.

The entire intestinal tract shows passive congestion of rather marked degree. There are numerous hemorrhagic erosions in the gastric mucosa.

Summary — An aged woman, has suffered for many years periodic attacks of uncontrollable rage during which she would beat up her husband; these were due to hypoglycemia associated with adenoma of the Islands of Langerhans.

NONPELLAGROUS ERUPTIONS DUE TO DEFICIENCY OF VITAMIN B COMPLEX

A series of cases of extensive and localized eruptions responded to treatment with liver extract, namely, seborrheia, monilial infections, vulval and anal eczema and kraurosis valvae, certain types of arsphenamine dermatitis. It is suggested that the condition is vitamin B complex deficiency and that this deficiency is due to low intake only in occasional instances. More commonly it is based on a constitutional predisposition which may be identified with the so-called seborrheic diathesis. This consists of an abnormal functioning of the skin described usually as seborrheic and associated frequently with digestive disorders, especially gastric hypoacidity or anacidity, interfering with the proper use of vitamins. This secondary deficiency can be corrected by treatment with vitamin B complex. As the result of this treatment not only is the dermatitis influenced but probably also the underlying disorder of digestion and assimilation, so that recurrences may in some cases be prevented for an indefinite period.

No claim is made for a curative effect of liver therapy in the average case of seborrheic eczema, but further studies and a more rational therapy with synthetic products are necessary to clarify the role of vitamin therapy in this disease.—*Paul Gross, M.D., Archives of Dermatology and Syphilology, March,* 43: 504-531, 1941.

The first method of protecting hospital personnel sis in the patient population. W. H. Oatway, Jr., against tuberculosis is a recognition of all tuberculo- M.D. Hopsitals, Aug., 1941.

THE ACTION OF PAREDRINOL AFTER INDUCTION OF HEMORRHAGE AND CIRCULATORY COLLAPSE

In order to determine the effect of a decrease in blood volume on the body to paredrinol the clinical condition, pulse, and arterial pressure of 6 normal subjects in whom the blood volume had been decreased by venesection was studied. From 760 to 1,220 cc. of blood was removed. In 5 of the 6 subjects, circulatory collapse occurred either during the venesection or a few minutes afterwards. In 3 subjects paredrinol was injected 25 to 60 minutes after the venesection, when they were symptom free. Two of the subjects had developed circulatory collapse, but had recovered before administration of the paredrinol. In each of these 3 instances there was a rise in arterial pressure and a fall in heart rate.

In 3 cases paredrinol was injected at the height of the collapse. The subjects were pale, sweating, nauseated, and the hands were cool. In 2 subjects the arterial pressure was 62/40 and 50/30 mm. Hg. respectively; in the third it could not be obtained. In each case within 3 minutes after the injection of paredrinol the systolic pressure had risen to 100 mm. The arterial pressure did not reach the level attained before venesection. The difference between the heights to which the arterial pressure rose before and after venesection was more marked in these subjects than in those who had received paredrinol from 25 to 60 minutes after venesection.—*E. A. Stead, Jr., M.D., and R. V. Ebert, M.D., American Journal of the Medical Sciences, March,* 201: 395-399, 1941.

SUPPLY OF PHYSICIANS MAY NOT KEEP UP WITH DEMAND

National defense demands for physicians may exceed the available supply, according to figures announced by the American Medical Association.

New doctors are being graduated from medical schools in the United States at the rate, on the average, of 5,173 each year. The number has remained fairly constant for the past six years. Physicians licensed to practice medicine for the first time average 6,049 each year. The difference between the two figures is accounted for by licenses to graduates of foreign medical schools.

The defense program demands, in connection with training an army of 1,400,000 men, from 7,000 to 8,000 reserve medical officers for each of the next three or four years.—*Science News Letter.*

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

HOBBIES

In the March issue of the Journal there appeared an interesting article on "Hobbies." Many Illinois doctors are interested in photography, painting, sculpture as shown in the Second Edition of PARERGON just published by Mead Johnson & Co. Works of the following doctors are illustrated in this attractive booklet:

William F. Peterson, Chicago; Clara Jacobson, Chicago; Max Thorek, Chicago; Maximilian Kern, Chicago; W. W. Bauer, Chicago; P. E. Lawler, Chicago; George Marchmont-Robinson, Chicago; John E. Swenson, Chicago; H. Hoyt Cox, Chicago; Franklin E. Hall, Chicago; Adolph M. Brown, Chicago; Lewis L. Brown, Chicago.

A postgraduate course in obstetrics and pediatrics will again be offered at the University of Illinois the week of June 22nd. This course is made available to Illinois physicians by the cooperation of the Illinois State Medical Society, the Illinois Department of Public Health, and the faculties of the approved medical schools of Chicago.

N. C. Barwasser addressed the annual meeting of the Mercer County Medical Society at Aledo on the subject of "Diagnosis and Treatment of Cutaneous Malignancies."

Ralph A. Reis addressed the Sixth Annual Session of the Louisiana Obstetrical and Gynecological Society in New Orleans on April 27, subject "Gynecography" and the Louisiana State Medical Society on "Causes and Treatment of Spontaneous Abortion," April 28th.

The Warren County Medical Society honored Dr. H. L. Kampen of Monmouth at a dinner, Thursday, April 16th at which time he was presented with the Fifty Year Club Pin of the Illinois State Medical Society, by E. P. Coleman, Councilor of the Fourth District. Speakers at the dinner included James H. Hutton, Edwin S. Hamilton and Charles H. Phifer.

The following programs have been arranged by the Educational Committee during the Annual Meeting in Springfield.

Radio talk on "Keep Fit and Win This War" — Robert S. Berghoff, Station WTAX and Station WCBS.

Radio talk WTAX — Roland R. Cross.

Radio talk WTAX — Rollin Cutts — "Immunization."

Rotary Club of Springfield — May 18 — Charles H. Phifer.

Lions Club of Springfield — May 19 — James H. Hutton.

Kiwanis Club of Springfield — May 20 — Robert S. Berghoff.

Cosmopolitan Club of Springfield — May 21 — E. P. Coleman.

American Business Club of Springfield — May 21 — I. H. Neece.

COMING MEETINGS

May 12 — Tazewell County — Pekin — Harlan English — "Syphilis."

May 12 — Effingham County Medical Society — Benwood Hotel, Effingham — Samuel J. Taub — "Diagnosis of Allergy — Procedures and Limitations."

May 12 — Adams County Medical Society — Quincy — E. Lee Dorsett — "Complications of the Third State of Labor."

May 14 — Union County Medical Society — Anna — James S. Templeton — "Medical Economics."

May 26 — Macoupin County Medical Society — James H. Hutton — "One Hundred Years of Medical Progress."

May 28 — Logan and DeWitt County Medical Societies — Clinton — speaker on "Diseases of the Cervix."

MARRIAGES

Robert H. Robbins, Waukegan, Ill., to Miss Rachel Egbert of Urbana recently.

Daniel Edward Bowers, Peoria, Ill., to Miss Virginia Rusk of Tremont recently.

Max Norman to Miss Agnes Zuverink, both of Chicago, in Joliet, Ill., recently.

Ignatius W. Madura to Dr. Edith Eason, both of Chicago, at North Bend, Neb., Dec. 20, 1941.

DEATHS

Isaac Newton Bourland, Equality; Miami Medical College, Cincinnati, 1883. He had practiced for more than 50 years and was ill only a few days. Died April 21, 1942, at the age of 84.

Theodore Thompson, Shelbyville; Rush Medical College, 1897. He was at one time mayor of Shelbyville and served with the medical corps in 1918 and 1919. He was a member of the Staff of the Decatur and Macon County Hospital. Died April 18, 1942 at the age of 69 years.

Joseph B (olivar) DeLee, founder of the Chicago Lying-In Hospital, died April 2, 1942 at his home, 5028 Ellis Avenue, Chicago. He was 73 years old.

Because of Dr. DeLee's efforts as a clinical investigator, practitioner, teacher and missionary, obstetrics in the United States during his nearly fifty years of active work has been developed to a greater degree than in any country in the world.

Dr. DeLee was born at Cold Springs, New York, October 28, 1869. He attended high school in Chicago and took his college work at the College of the City of New York. After graduating from the Chicago Medical College in 1891, he interned at Cook County Hospital before doing graduate study at the Universities of Berlin, Vienna, and Paris in 1893 and 1894.

Before he went abroad, Dr. DeLee had begun teaching at Chicago Medical College in 1892, and when this institution became the medical school of Northwestern University he was appointed to its staff in 1894. In 1896 he became professor of Obstetrics at Northwestern University Medical School.

His interest in obstetrics began as a medical student, and was increased by his training abroad, where obstetrical practice was more advanced than in the United States. In 1895, when he began his obstetrical work in a maternity center in a small building at Maxwell and Newberry Streets, maternity cases were largely left to midwives.

Between cases, he begged the money to support the maternity center, and both his medical success and his zeal in the cause resulted in rapid development of the institution. In 1917, the first Chicago Lying-In Hospital and Dispensary was opened at 51st Street and Vincennes Avenue.

In 1931, the hospital was moved to its present $1,800,000 building at the University of Chicago, with which it was formally merged in 1938. In the present institution, more than 28,000 children have been born, and the methods established by Dr. DeLee have enabled the hospital to achieve a notably low maternal and infant death rate. A few years ago, the hospital did not have a single maternal death in a period extending over 18 months.

Dr. DeLee was head of the hospital until his retirement in 1939. Despite his interest in a farm which he owned 45 miles west of Chicago, he maintained his concern with his life's work. He had visited the hospital only two days before his death.

The author of several standard works on obstetrics, Dr. DeLee was vice president of the American Gynecological Society. President of the Chicago Gynecological Society and Editor of the Year Book of Obstetrics from 1904 to 1939.

He was a member of the Fifty Year Club of the Illinois State Medical Society.

Philip A. Halper, Chicago; University of Minnesota Medical School, 1922. He was an Associate in Ophthalmology at the University of Illinois Medical College, the Michael Reese Hospital and the Illinois Eye and Ear Infirmary; Attending Ophthalmologist at the Mandel Clinic and a member of the staff at Grant Hospital. He died April 21, 1942 at the age of 44.

Louis W. Matthei, Chicago; Rush Medical College, 1897. He had been on the staffs of the Presbyterian, People's and St. Anthony's Hospitals and had been in practice in Chicago for 45 years. He died April 5, 1942 at the age of 69.

Albert N. Oyen, Chicago; Rush Medical College, 1905. He was a member of the staff of the Lutheran Deaconess Hospital and a member of the local and national Medical Societies. He died April 19, 1942, at 64 years of age.

George V. Wyland, Chicago; University of Illinois College of Physicians and Surgeons, 1898. He died April 20, 1942 at the age of 71 years.

Frank Charles Baecht, Grafton; Beaumont Hospital Medical College, St. Louis, 1895. He had practiced medicine 47 years and died of a heart condition on March 28, 1942, aged 77 years.

Thomas R. Crowder, Winnetka; Rush Medical College, 1897. He was Medical Director for the Pullman Company and a Fellow of the American Medical Association. During the World War 1, Dr. Crowder aided in the planning of hospital trains, four of which were built by the Pullman Company. He died April 15, 1942 at the age of 70 years.

Thomas H. Culhane, Rockford; Rush Medical College, 1890. He had practiced medicine for 52 years in Rockford and his fame extended far beyond his home town community. He was a member of the American Medical Association and a Fellow of the American College of Surgeons; a former vice-president of the Illinois State Medical Society and a member of the Fifty Year Club of the State Society. He died April 14, 1942 at the age of 73 years.

Charles H. Robinson, Cullom; Chicago College of Medicine and Surgey, 1910. Died April 14th of a heart ailment at the age of 68 years.

Thomas M. Eade, Champaign; Rush Medical College, 1894. Died March 12, 1942, aged 69 years.

James H. Finch, Champaign; College of Physicians and Surgeons of Baltimore, Md., 1895. He had been president of the Illinois Orthopedic Association, the Central Illinois Radiological Association, and the Champaign County Medical Society. He had been vice-president of the Central States Society of Industrial Medicine and Surgery. He died suddenly April 21, 1942 of a heart ailment at the age of 72.

Lyston D. Howe, Streator; University of Illinois College of Medicine, 1903. He had been serving as a medical examiner for the Streator district Selective Board; he was affiliated with the Masons, Elks and Odd Fellows. At the time of the Cherry mine disaster, Doctor Howe was company physician for the St. Paul Coal Company and he courageously joined in rescue work. He died April 11, 1942, aged 61.

Joseph Martin Knochel, Lincoln; Bennett College of Eclectic Medicine and Surgery, 1915. He served overseas as a First Lieutenant in the Medical Corps in the last war. He had been active in Legion affairs and was a member of the medical examing board of the selective service board. He died in March, 1942, at the age of 52.

Charles H. Robinson, Cullom; Chicago College of Medicine and Surgery, 1910. Died April 14th of a heart ailment at the age of 68 years.

Monroe H.Solliday, Taylorville; Jefferson Medical College of Philadelphia, 1910. He was a member of the Christian County Medical Society, the First Presbyterian Church and of the Masonic lodge. He died suddenly following a heart attack on March 29th at the age of 68.

Harry Magee, Peoria; University of Pennsylvania School of Medicine, 1908. He was a well known x-ray specialist in Illinois. He died April 20, 1942 at the age of 57 years.

James F. Forbes, Chicago; University of Illinois, 1914. He died April 25, 1942, aged 82 years.

Arthur W. Wilson, Chicago; Bennett Medical College, Chicago, 1903; aged 74; died, January 22, in Los Angeles of cerebral hemorrhage.

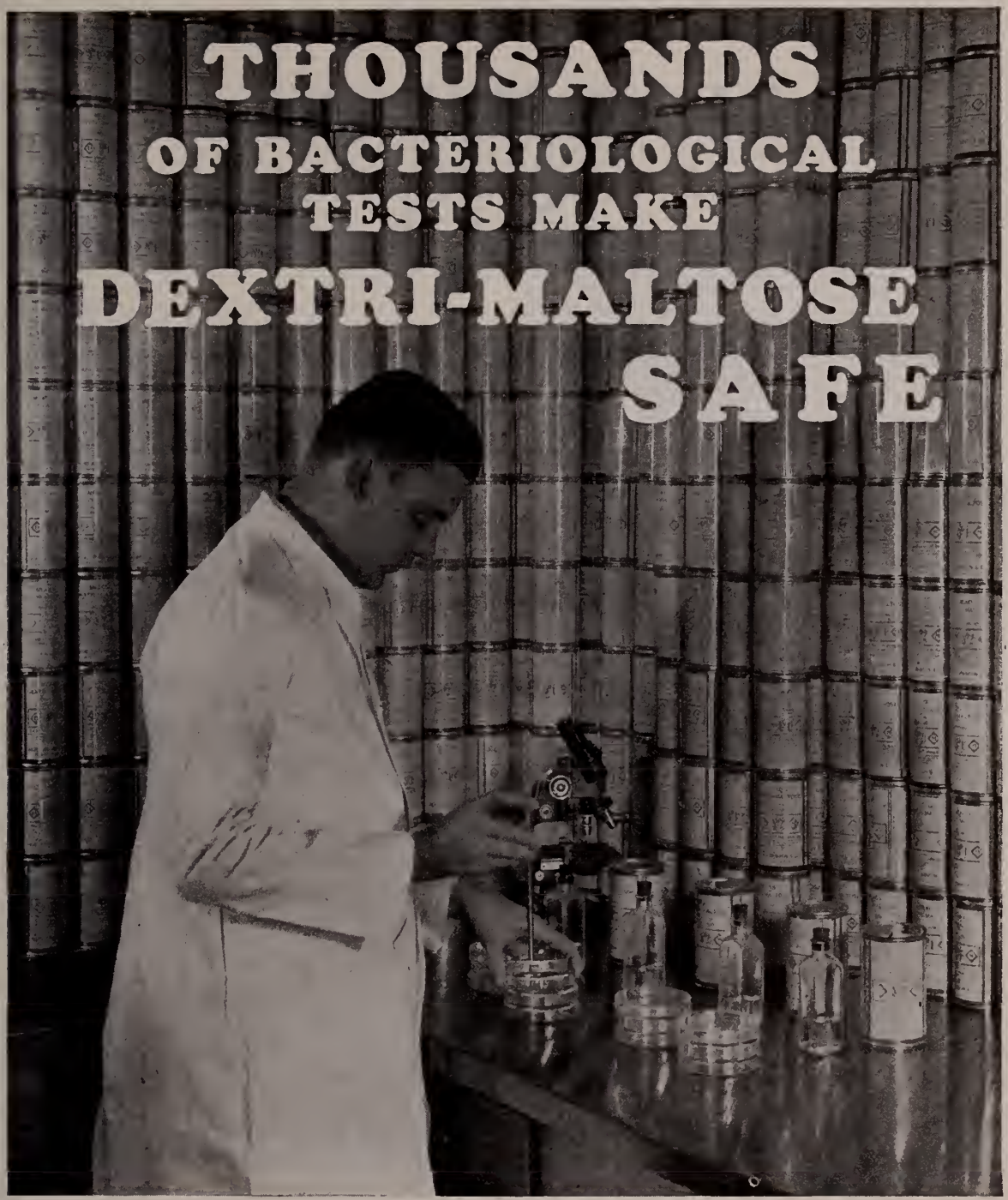
William Carter, Chicago; National Medical University, Chicago, 1904; aged 71; died, January 4, in the Provident Hospital.

Mark Clyde Jones, Joliet, Ill.; Marion-Sims College of Medicine, St. Louis, 1898; served during World War I; aged 70; died, February 10.

Ira Brown, Chicago; University of Oklahoma School of Medicine, Oklahoma City, 1932; was appointed a first lieutenant in the medical reserve corps of the U. S. Army, Oct. 16, 1935; became a captain April 11, 1940 and a major Feb. 1, 1942; fellow of the American College of Surgeons; formerly clinical instructor of gynecology and obstetrics at the University of Chicago, The School of Medicine; at one time associate in obstetrics and gynecology at the Chicago Lying-In Hospital and Dispensary; aged 35; was burned to death, April 10, when a fire destroyed an officers' barracks at Camp Grant, Ill.

Even in the most disastrous wars it is clear that the casualties are trivial in comparison with the annual morbidity and mortality from wholly preventable causes suffered by the population. Along with the expenditure of dizzy billions to combat foreign foes, it would seem the part of wisdom to devote a respectable amount of our defense energies and resources to the conquest of the ever present and very real foes within our domestic circle, if for no other reason than the fact that the first line of military defense is the health of the civilian population. K. E. Miller, Med. Dir., U. S. Pub. Health Serv., Amer. Rev. of Tuber., Dec. 1941.

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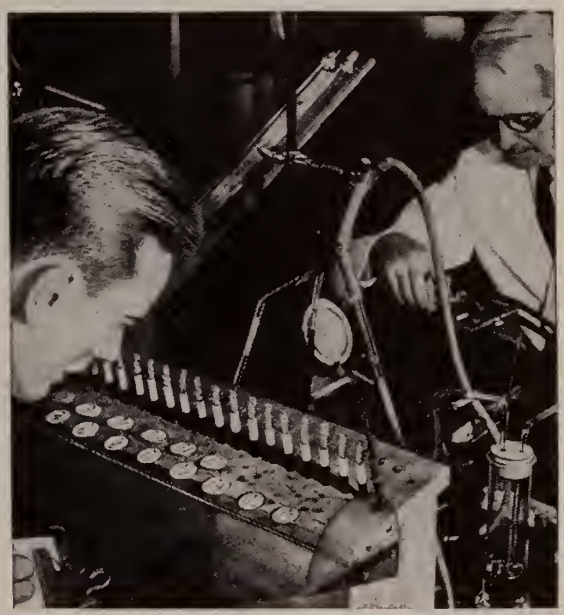
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*J.A.M.A., 93:1110—October 12, 1929
Brückner, H—Die Biochemie des Tabaks, 1936
**The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941

SEND FOR REPRINT of an important contribution to medical literature—"The Cigarette, The Soldier, and The Physician," *The Military Surgeon,* July, 1941. This significant analysis reveals many new angles about smoking that should be valuable to you when modifying patients' smoking without disturbing their smoking enjoyment. Write to Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

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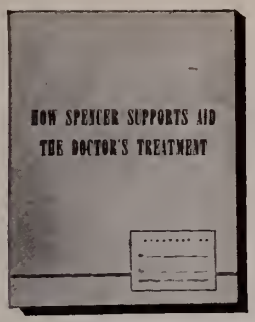
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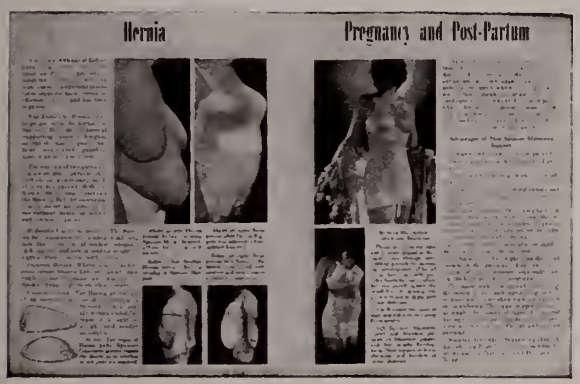
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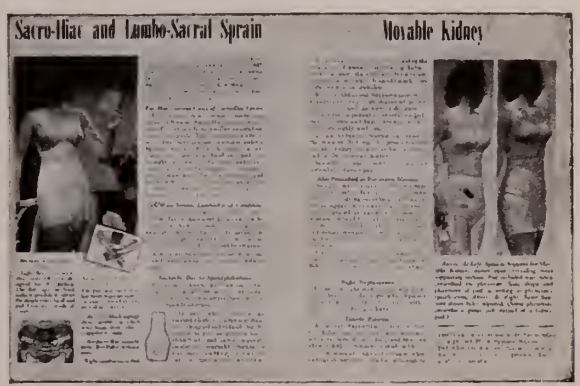
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Book Reviews

COMMUNICABLE DISEASE NURSING. By Theresa I. Lynch, R.N., Ed.D., Instructor in Education, New York University; Formerly Superintendent of Nurses and Director of Instruction, the Willard Parker Hospital, New York City. The C. V. Mosby Company, St. Louis. Price $3.75.

This book has been written with distinctly practical purposes in mind, and by an author with a great deal of experience in the various phases of community health.

The medical angle of the many communicable diseases is boiled down to include only the most basic material and information. As a result class room lectures and current literature can be employed to supplement this phase of the nursing program.

The actual phases of communicable disease nursing are well outlined, illustrated and discussed. There are many illustrations showing hospital or home situations and procedures to show the application of various types of technique. The transfer of patients from one ward to another is thoroughly discussed.

The book is designed primarily for student use, however the contents are of value in all problems of civic health and of value to parents caring for children with some types of communicable diseases.

A HANDBOOK OF OCULAR THERAPEUTICS. By Sanford R. Gifford, M.A., M.D., F.A.C.S., professor of Ophthalmology, Northwestern University Medical School, Chicago; attending ophthalmologist, Passavant Hospital, Wesley Memorial Hospital, Cook County Hospital. Ed. 3, thoroughly revised. Cloth. Price $4.00. Lea & Febiger, Philadelphia, 1942.

In presenting the third edition of "Ocular Therapeutics" Dr. Gifford has brought up to date the proven therapeutic agents and methods in the field of ophthalmology. His volume is void of useless statistics and useless material. He has dared to leave out that which is obsolete, and to include those things new in his field of proven value. He has also expressed his own opinions, for which the specialists in his field, can be very grateful.

The book covers the entire subject, yet it is not in any way voluminous, and as a result is a volume for handy and accurate reference for practicing physician and student alike.

ENCEPHALITIS, A Clinical Study. By Josephine B. Neal, A. B., M. D., Sc.D., F.A.C.P., Associate Director, Bureau of Laboratories, Department of Health, New York; Clinical Professor of Neurology, College of Physicians and Surgeons, Columbia University. Grune and Stratton, New York, 1942. Price $6.75.

We learn from the introduction to this volume, also written by Dr. Neal, that The William J. Matheson Commision for Encephalitis Research was established in 1927 through the generosity of Mr. Matheson, himself a victim of encephalitis. The reports of this Commission represent a survey of our knowledge of the various forms of this disorder, and in this new volume, all aspects of the subject, including the epidemiology, complications, clinical course and treatment, are reviewed.

It is only during the last twenty-five years that encephalitis has been recognized as a clinical entity, and even today, many phases of the disease are not elucidated. However, much knowledge has been accumulated, and Dr. Neal and her collaborators have made a very fine contribution to this knowledge. This volume should prove of great value to all interested in the group of disorders which we have come to designate as encephalitis.

METHODS OF TREATMENT IN POSTENCEPHALITIC PARKINSONISM. By Henry D. von Witzleben, M.D., Elgin State Hospital, Elgin, Illinois. Grune & Stratton, 1942. Price $2.75.

This little volume is an excellent piece of work,

(Continued on page 36)



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BOOK REVIEWS (Continued)

bringing up to date the available information on the management of postencephalitic Parkinsonism. The author concerns himself almost entirely with methods of therapy, the discussion of which he divides into ten headings.

Considerable space is given to the discussion of the Bulgarian treatment, and an interesting phase of this section is the fact that specific information as to the proprietary preparations of the Bulgarian belladonna root is given.

Many who suffer from this disease will be found to respond to treatment, and an improvement noted. The book can be highly recommended for general use.

DIABETES MELLITUS. By Zolton T. Wirtschafter, M.D., Clinician in charge, Clinic for Diabetes, Department of Medicine, Mount Sinai Hospital, Cleveland; and Morton Korenberg, M.D., Former Fellow, May Institute of Medical Research, The Jewish Hospital, Cincinnati. The Williams & Wilkins Company, Baltimore, 1942. Price $2.50.

The great number of persons suffering from diabetes today makes this subject one of utmost importance. There is a tremendous difference in the results obtained between the various forms of treatments given to diabetics. All physicians today should be familiar with the various forms of therapy used, and the best means of management of this disease.

This small volume supplies facts and methods in brief and accurate fashion which will be appreciated by the practicing physician.

Books Received

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

THE MEDICAL CLINICS OF NORTH AMERICA, March, 1942. Volume 26, St. Louis Number, Number 2. The W. B. Saunders Company, Philadelphia and London. Symposium on Medical Emergencies. Symposium on Tuberculosis. $12.00 per clinic year in paper; $16.00 per clinic year, cloth.

(Continued on page 38)

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IN THE MAINTENANCE OF *Nutrition*

DURING FEBRILE DISEASE

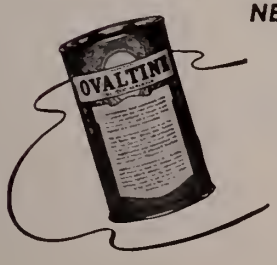
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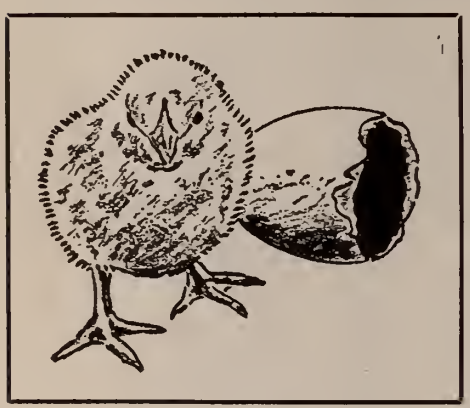
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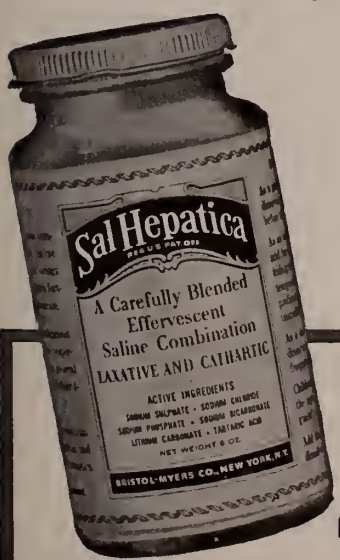
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SAY SPECIFIC GRAVITY OF BODY SHOULD BE MEASURE OF OBESITY

Physical Fitness In Regard To Overweight Should Not Be Determined By Standard Age-Height-Weight Tables, 3 Men Say

The determination of obesity (excessive fat) in regard to the physical fitness of an individual should be measured by means of specific gravity, not the standard tables which interpret weight in relation to height and age, two groups of authors contend in *The Journal of the American Medical Association* for February 14.

The specific gravity of a substance is the ratio of the weight of a given volume of that substance to the same volume of water at 4 C. A cubic foot of a substance with a specific gravity of 1 weighs exactly the same as a cubic foot of water.

A. R. Behnke Jr., Lieutenant Commander, M. C., U. S. Navy, and B. G. Feen, M. D., Lieutenant, M. C., U. S. Navy, report data which they say "support the concept that the comparatively low specific gravity of fat makes the measurement of the specific gravity of the body mass valid for the estimation of fat content."

They have devised a method of determining the specific gravity of an individual which permits classification "as to degree of obesity and serves as a single index of physical fitness to supplement the standard age-height-weight tables which frequently lead to a designation of overweight for well developed men in contrast with a designation of normal weight for more obese individuals who fall into a lower weight group."

They say that "since the density of the mass of tissue exclusive of bone and fat is probably constant for healthy men, the amount of fat appears to be the main factor affecting the specific gravity of a person. . . ."

In conclusion they say that "values of specific gravity for healthy men ranging in age between 20 and 40 fall between 1.021 and 1.097. Low values for specific gravity indicate obesity and, conversely, high values denote leanness. Individual loss in weight through exercise and a restricted diet is associated with an increase in specific gravity. . . ."

In another paper in the same issue of *The Journal,* W. C. Welham, M. D., Lieutenant, M. C., U. S. Navy, and Commander Behnke report

(Continued on page 42)

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OBESITY (Continued)

investigations showing that a group of heavy but lean men possess a high average value for specific gravity.

They found that a group of professional football players, the majority of whom had been selected for "all American" football teams, had an average weight of 200 pounds but the average specific gravity reached the high value of 1.080.

"According to standard height-weight tables," they say, "the majority of the football players could be classified as unfit for military service and as not qualified as risks for first class insurance by reason of over-weight. . . ."

Studies of seventy-five naval men bore out their finding with the athletes and those reported in the other paper in *The Journal.* Of the seventeen football players who would be rejected by insurance companies and in the military service on the basis of the standard height-weight tables, the authors say that, according to their classification in regard to specific gravity, eleven "are in prime physical condition if the absence of excessive fat is a criterion of fitness. The type of physical exertion, moreover, that these men are called on to make is proof of their sturdy physique, estimated in terms of speed, agility and endurance.

"We propose, therefore, the classification of men as overweight on the basis of specific gravity of the body mass, using a tentative dividing line of 1.060 for the elimination of the obese."

Routine collapse therapy of minimal pulmonary tuberculosis is not justified. Conservative therapy is the treatment of choice. From 75 to 80 per cent of thhe cases (studied) resolve or fibrose and become stable with bed-rest and remain well. I. D. Bobrowitz, M.D., Amer. Rev. of Tuber., Mar. 1942.

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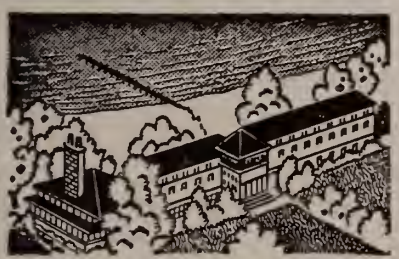
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JOURNAL WARNS AGAINST ISSUANCE OF CERTIFICATES TO PROSTITUTES

Says That The Certification Of Freedom From The Venereal Diseases Is Worthless And Menaces Health Of Armed Forces

Any local, municipal system that encourages the giving of certificates to prostitutes that they are free from the venereal diseases "trifles not only with the health of its civilian population but also with that of the Army and Navy," *The Journal of the American Medical Association* for April 18 warns in an editorial on "The Venereal Disease Problem in War." According to available scientific evidence, such certification is worthless.

The Journal says:

"Invariably in past wars there has been an increase in the rates for the venereal diseases. The Annual Report of the Surgeon General of the United States Army for the fiscal year 1941 shows that the venereal disease rate increased in the recent prewar period of mobilization from 29.6 per thousand men in 1939 to 42.5 per thousand men in 1940.

"Infected persons in the civilian population, particularly prostitutes, are links in the chain of infection of the armed forces with syphilis and gonorrhea. Frequently the venereal disease rate in the Army and Navy is comparable to the incidence and prevalence of syphilis and gonorrhea in the civilian population in the area in which the armed forces are located. Therefore the civilian program for control of venereal disease must be maintained at the optimum effective level during war.

"The War Department is preparing to meet this problem. A venereal disease control officer will be assigned to each corps area headquarters to stimulate work against venereal disease. Furthermore, army venereal disease control officers will be appointed to each command with a strength of more than twenty thousand men. These new control officers will work with health departments and other civilian agencies. Attempts will be made to examine all contacts with infected men and to treat those who are found infected. The program will also include the strengthening of prophylactic measures, the provision of more adequate physical inspection

to detect venereal diseases early, improvement in methods for the diagnosis and treatment of infected military personnel, provision of additional recreational facilities in cooperation with other military agencies, and intensification of the educational program.

"A cardinal principle of epidemiology in the control of communicable diseases is limitation of the number of contacts between infected, potentially infected and healthy persons. This principle applies in syphilis and gonorrhea as much as it does in other communicable diseases. Already there is evidence that some physicians have placed in the hands of irresponsible prostitutes certificates with the connotation that these women are free from the venereal diseases. The scientific evidence available indicates that certification of this kind is worthless. Any local, municipal system that encourages such certificates trifles not only with the health of its civilian population but also with that of the Army and Navy."

DAILY SUGAR ALLOWANCE SHOULD BE TWO TABLESPOONFULS

Two tablespoonfuls daily is recommended as the maximum allowance of sugar by *Hygeia, The Health Magazine.*

In answer to an inquiry as to the effect of sugar in the diet, *Hygeia* says: "One pound of sugar provides 1,800 calories and nothing else. It contributes none of the nutritionally important protein foods as whole grains, fruits and vegetables.

"The eating of white sugar, either cane or beet, in large amounts, may place a burden on the pancreas. The pancreas secretes a substance which is necessary to enable the body to use sugar as a fuel food. If the pancreas is impaired or injured, its ability to secrete insulin is also impaired and as a result the body loses its ability to burn sugar.

"There is also evidence that excessive consumption of sugar may weaken the protective power of the liver and thereby cause numerous so-called bilious symptoms. Brown sugar has the same effect as white sugar. Eating sugar in excessive amounts may make one feel dull and bilious because of these reasons."

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PHYSICIAN SAYS BACILLARY DYSENTERY IS COMPLETELY PREVENTABLE

Just as the surest way of eradicating a weed is to pull it out by the roots, the best way of eliminating bacillary dysentery (an infectious disease marked by intestinal pain and diarrhea) is to trace it to its source and then remove the cause, Joseph Felsen, M.D., New York, declares in the March issue of *Hygeia, The Health Magazine.* "A large number of people suffer from this disease, yet they do so unnecessarily," he claims, "because it is completely preventable."

Prevention of dysentery, the author states, is dependent on checking the disease at its source. In order to carry this out effectively, international cooperation and the certification of passengers and crews of ships as to presence or absence of infectious diarrhea at points of embarkation and before disembarkation are necessary.

"The adequate sanitary supervision of transportation systems (boats, trains, trailers, airplanes), summer camps, food and food handlers," he points out, "can be accomplished only by the intelligent cooperation of our citizens. They must provide the laboratory facilities and efficient personnel and take public health out of politics. Every case of bacillary dysentery is caused by a germ which comes from the intestine of an infected person to the mouth of the victim. It travels on the 'FFF' (food, fingers, flies). In other words, food (including water) is infected by the germs of the intestinal tract; these are swallowed and give rise to cramps, diarrhea and fever.

"When one stops to think of the heterogeneous collection of employees handling our food in cafeterias, the wonder grows that we escape dysentery at all. Many of these employees are transients coming from areas where dysentery is rife. We have no adequate system of supervision at present. The same applies to our summer camps, many of which have little or no efficient supervision. . . ."

Education and isolation, Dr. Felsen advises, are the keys to the prevention and control of all infectious diarrheas. By the observation of simple rules for avoiding bacillary dysentery, amebiasis (infection with amebas), typhoid, paratyphoid and other intestinal diseases contracted in a similar manner may be avoided. He suggests prevacation talks to school children and college students and educational films on the subject to help enlist the cooperation of the young in warding off this disease.

"No health organization," he declares, "can function efficiently unless our citizens observe the rules laid down for their protection. Where unsatisfactory conditions prevail, citizen interest will effectively remedy them. Procrastination is fatal, as shown by some of our worst epidemics. . . ."

ATHLETE'S FOOT

A mixture of carbolic acid and camphor has been found effective in the treatment of "athlete's foot," Edward Francis, M.D., Washington, D. C., states in *The Journal of the American Medical Association* for December 6.

"The mixture," he says, "is nonirritating to the skin and may be painted between the toes several times a day. . . . The sock may be replaced immediately without danger of corrosion. There is no discoloration of the clothing. Relief from itching is immediate. . . . It should be pointed out, however, that the phenol-camphor preparation should not be applied to the wet skin since water causes a breakdown of the preparation with the result that it becomes caustic (corrosive)."

EXERCISE WON'T PREVENT DOUBLE CHINS

Exercises for the neck and throat, frequently advocated by "beauty" articles, cannot prevent double chins, *Hygeia, The Health Magazine* replies in answer to an inquiry.

"If a person grossly overeats so that he accumulates masses of fat, exercise cannot keep up with the process of fat storage," *Hygeia* states. "Furthermore, there is no evidence that the amount of exercise which one would take by contraction of the muscles of the neck would have any local effect. Even the constant activity of the abdominal muscles in respiration, twelve to fifteen times a minute at least, throughout hours, day, weeks and years, does not prevent the development of immense masses of fat between the abdominal muscles and the skin."

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RHEUMATIC HEART DISEASE A FACTOR IN VICTIMS' MARRIAGE PLANS

Although there is small risk of transmitting chronic rheumatic heart disease to one's children, the possibility that persons with this condition will die relatively young should be borne in mind when they consider marriage and parenthood, Joseph Harvey, M.D., and George Schwartz, M.D., New York, advise in the December issue of *Hygeia, The Health Magazine.*

"Many girls with rheumatic hearts will probably die young because of reinfection," they say, "creating an additional social problem where in the young children are left motherless. In a certain number of cases it is doubtful whether they will be able to carry even one pregnancy to a successful conclusion. Likewise, the man with a rheumatic heart must appreciate that his span of life, at least statistically, is about 20 years less than the average, emphasizing the social problem of leaving his children fatherless in the most productive period of his life."

Rheumatic infections, the true prevalence of which is unknown, are manifested not as a single, definite ailment, but rather as a widespread and chronic reaction of all body tissues. Heart involvement is common and is often serious. The greater the number of recurrences of the infection, the greater is the heart damage. The greatest number of first attacks occur between the ages of 5 and 12, the peak coming at about 7 years of age. Because younger patients become more seriously ill and are likely to have a shorter span of life, everything possible should be done to curb this diesease in children.

"The symptoms in children," the authors say, "include growing pains, a red skin rash, unexplained and periodic attacks of fever, failure to gain weight, frequent nose bleeds and either a rapid or slowly developing heart ailment. The involvement of one joint or of many joints may occur. Prolonged periods of absolute rest in bed are essential since permanent dilatation of the heart often occurs in children and young adults when they begin normal activity too soon.

"One of the most pressing needs of the patient is suitable occupation. This illness interferes with his schooling so often and so severely that he does not have the opportunity of becoming mentally equipped for the sedentary occupation to which his heart will probably limit him.

"Restriction of diet is entirely wrong, for there is no acceptable evidence today which supports ideas that foods concern themselves with aiding or bring about a rheumatic condition. The rheumatic child requires substantial foods. No rule can be laid down as to what is or is not permissible in the way of exercise. A safe axiom is: Never exercise to the point of getting tired or short of breath.

"When the child resumes school life, there are three things to be avoided: excessive fatigue, exposure to wet and cold, and underfeeding. Avoid these and be guided by the very infective nature of the disease, which takes advantage of any loss in the patient's general resistance."

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FINDS THAT DIABETIC PATIENTS ARE NOT PREDISPOSED TO BOILS AND CARBUNCLES

The prevailing impression among both physicians and laymen that boils and carbuncles are commonly associated with diabetes and that the diabetic are predisposed or more likely to suffer from these pyogenic (pus producing) skin infections than are the nondiabetic is not supported by clinical investigation, John R. Williams, M. D., Rochester, N. Y., reports in the April 18 issue of *The Journal of the American Medical Association.*

Dr. Williams made a study of 500 diabetic patients admitted to both office and hospital practice with reference to the incidence and occurrence of the pyogenic skin infections diagnosed as boils and carbuncles.

"In only 1 instance," he says, "did the onset of a boil coincide with the discovery of diabetes. In all the other cases, except 1, both boils and carbuncles occurred long after the onset of diabetes and apparently as an independent and unrelated phenomenon. In the 1 case the carbuncle occurred ten years before the onset of the diabetes.

"Although the numbers of cases in this study are small, they support the opinion and conclusions of other workers who have examined the question. They are as follows:

"1. The prevailing assumption that diabetes mellitus predisposes an individual to pyogenic skin infections is not supported by clinical investigation.

"2. Pyogenic skin infections occur no more frequently in diabetic than in nondiabetic individuals.

"3. Both of these complications (boils and carbuncles) occurred more frequently in the middle aged and elderly in whom a general breakdown was evident. . . ."

Tuberculin testing in a secondary school in Canada disclosed that out of 16 pupils who used the school bus 15 reacted positively to tuberculin, and one proved to be in the early stage of tuberculosis when X-ray examination was made. The driver of the bus, when examined, was discovered to be an open case of tuberculosis. Thirteen of the children were the only positive reactors in their respective families. The report of this investigation was made by Dr. William D. Hay to the Canadian Public Health Assn., Dec. 1941. Can. P. H. Jour., Jan. 1942.

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The ILLINOIS Medical Journal

JUN 1 1942

VOL. 81 NO. 6

June, 1942

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President's Address

The Treatment of Thyrotoxicosis

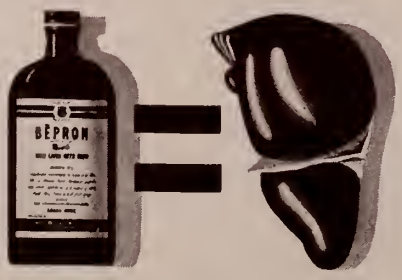
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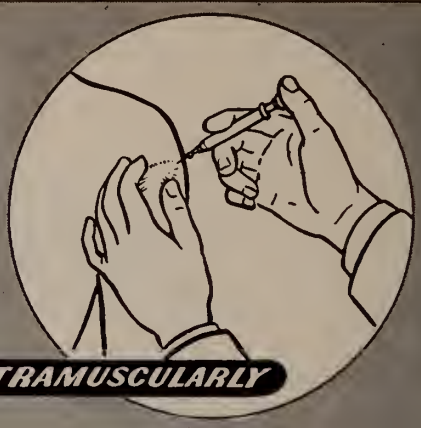
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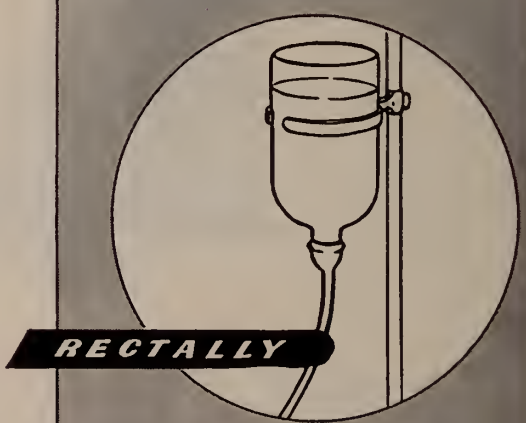
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1. Levin, E. A. & Keddie, Frances: *J.A.M.A.* 118:368, 1942

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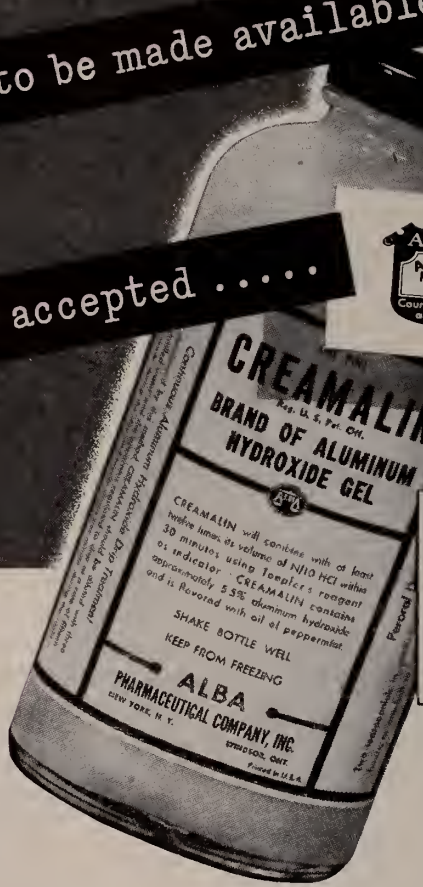
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[1] Cooley, T. B., *et al.: Jl. Pediatrics* 17:547 (Oct.) 1940.

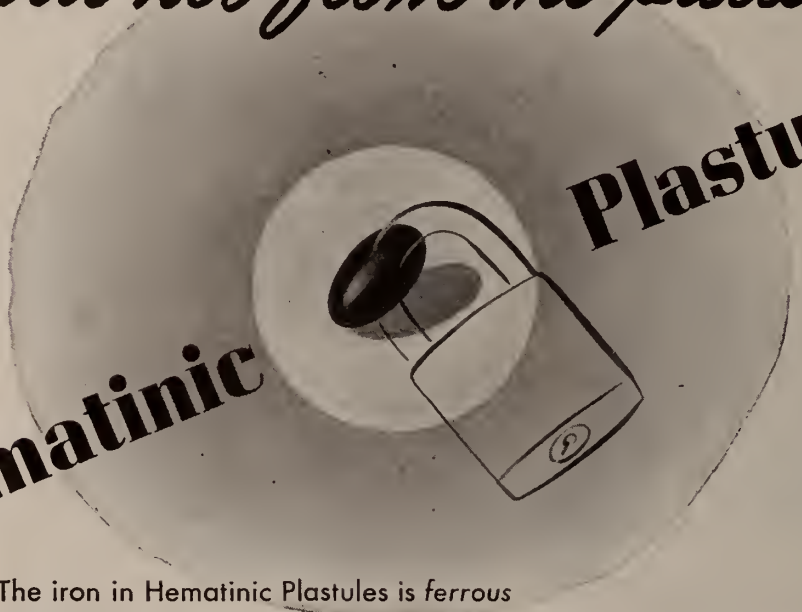
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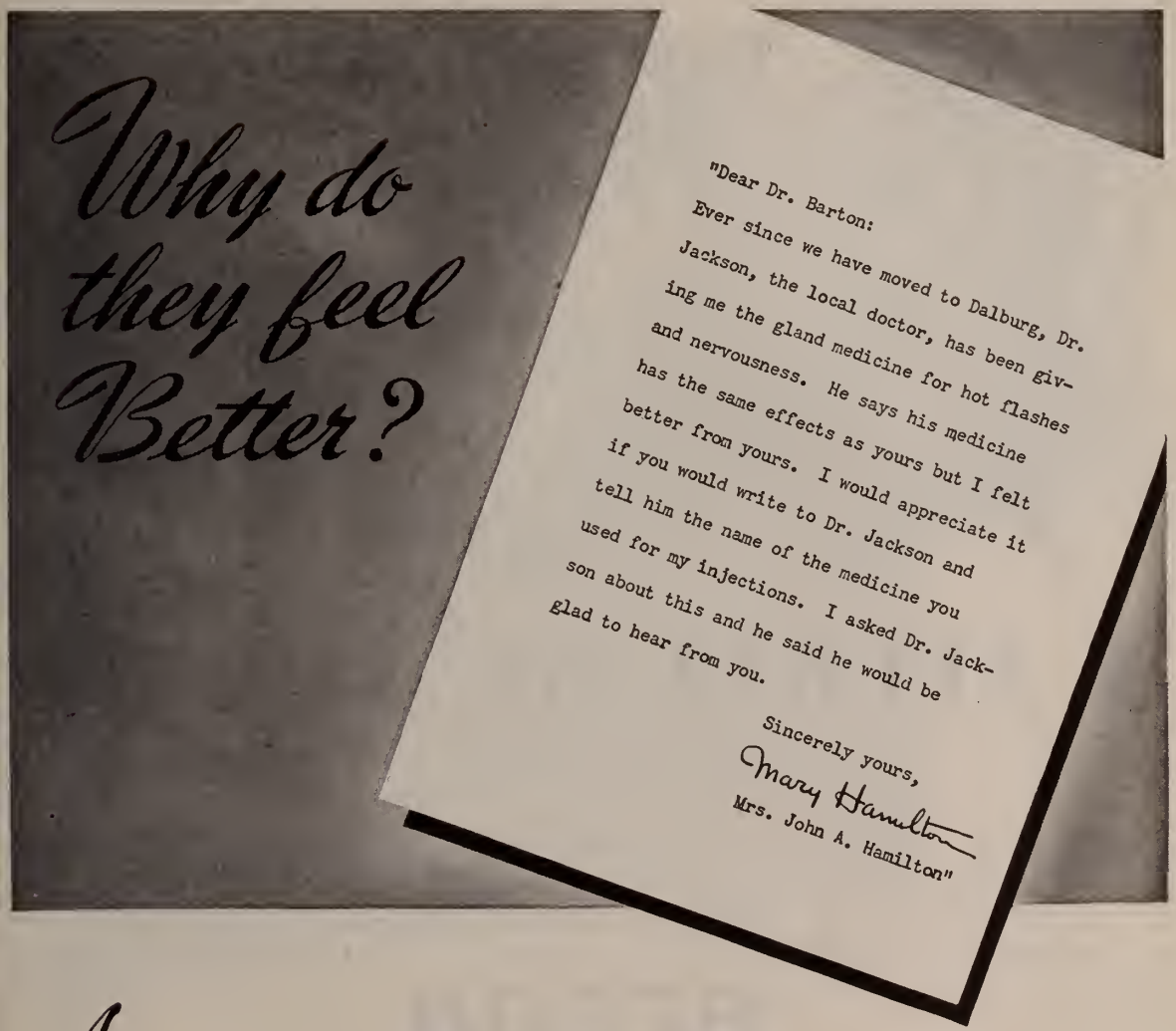
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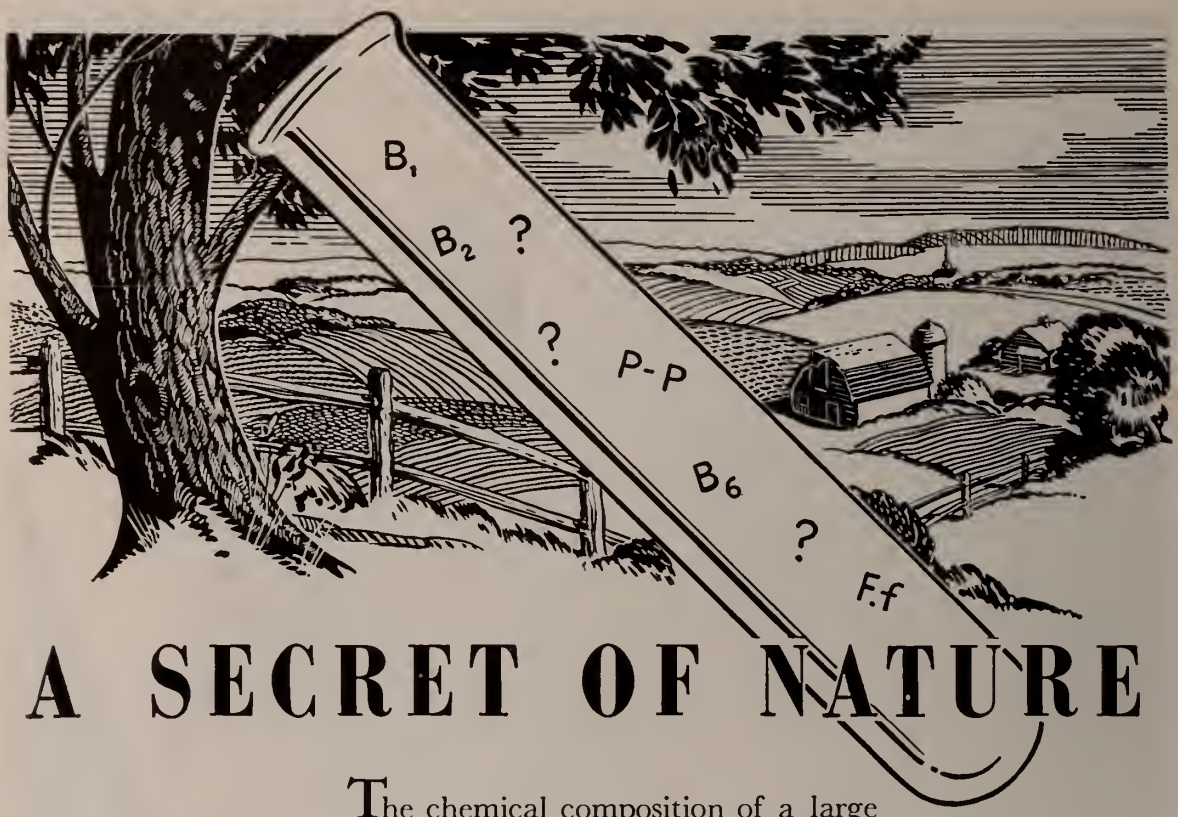
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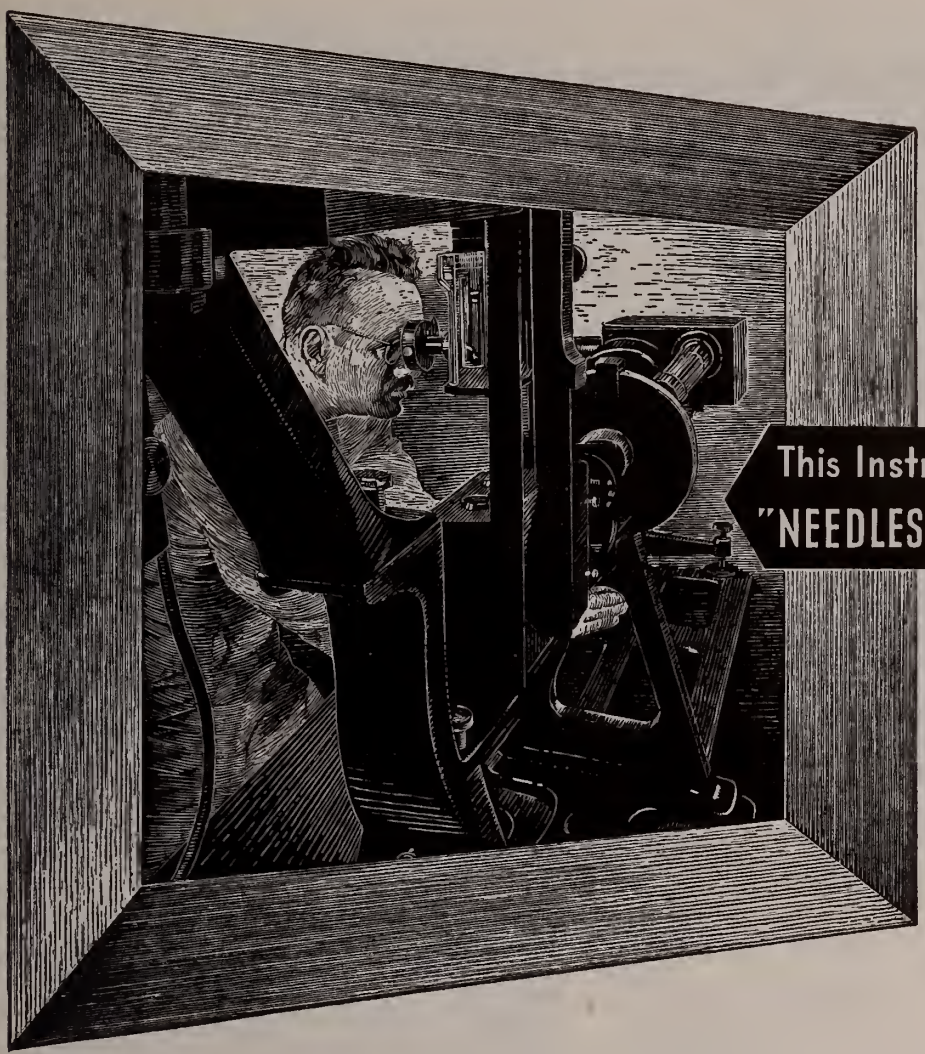
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*LOZNER, E. L., et al.: Am. J. M. Sc. 202:593 (Oct.) 1941.



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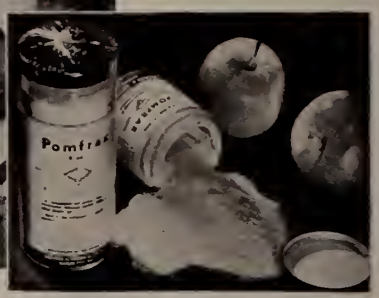
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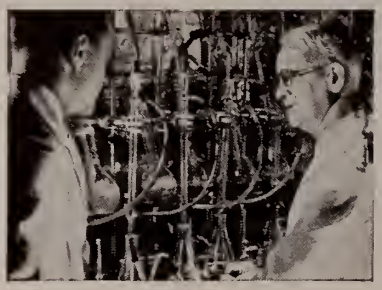
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***The Military Surgeon, Vol. 89, No. 1, p. 5, July, 1941*

****J.A.M.A., 93:1110—October 12, 1929*
Brückner, H.—Die Biochemie des Tabaks, 1936

REPRINT AVAILABLE of an important contribution to the medical literature on smoking—"The Cigarette, The Soldier, and The Physician," *The Military Surgeon,* July, 1941. There are many new angles on smoking experience revealed in this analysis—an aid to you when modifying patients' smoking without disturbing their smoking enjoyment. Write to Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

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American Can Company, 230 Park Avenue, New York, N. Y.

(1) 1939. The Canned Food Reference Manual, American Can Company, New York.

1938. Commercial Fruit and Vegetable Products, Second Edition, W. V. Cruess, McGraw-Hill, New York.

1937. Appertizing or the Art of Canning; Its History and Development, A. W. Bitting, Trade Press-room, San Francisco.

1936. A Complete Course in Canning, Sixth Edition, Press of "The Canning Trade," Baltimore.

The Seal of Acceptance denotes that the nutritional statements in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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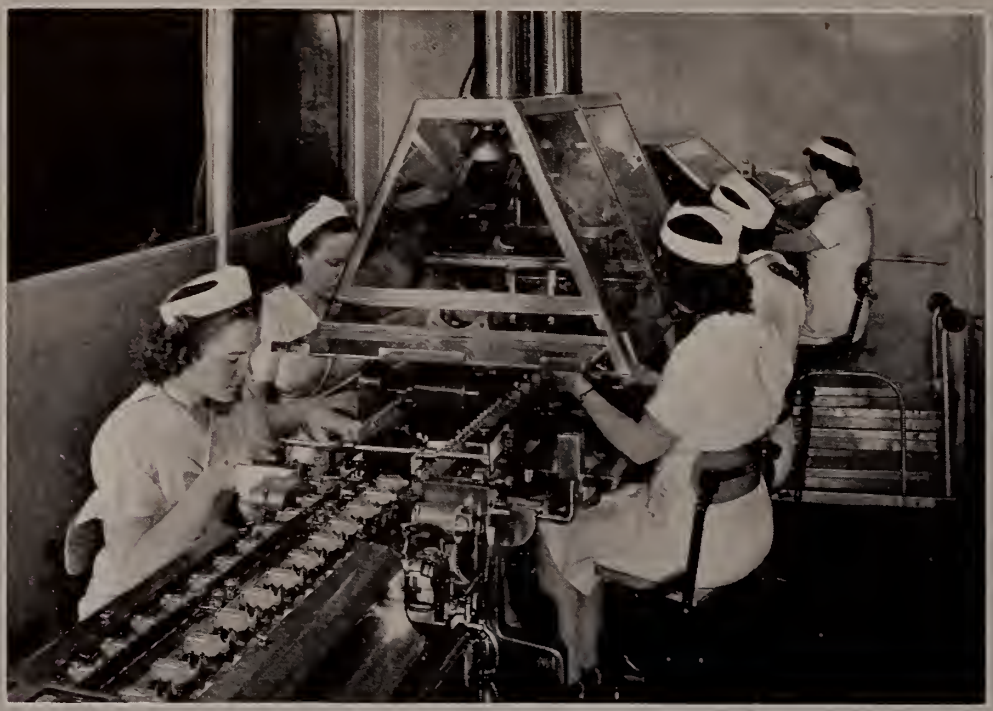
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The Illinois Medical Journal

June, 1942

VOL. 81, NO. 6

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Philip H. Kreuscher, Harry Culver.

Editorials

URGENT NEED FOR PHYSICIANS IN OUR ARMED FORCES

General Hershey, Director of the Selective Service System, has announced recently a new plan for procuring physicians for the armed forces. This new plan will most likely relieve much of the congestion in Washington and supply the needed men with a minimum of delay. A meeting was held in Washington on April 24th which was attended by the Corps Area Chairmen of Procurement and Assignment, the State Chairmen east of the Mississippi River, with representatives of the office of the Surgeon General of the Army and of the Adjutant General's office also present. On May 8th a similar meeting was held in Omaha attended by a similar group from all western states. At this meeting the plan approved by General Hershey in collaboration with other official groups was outlined in detail.

In each state members of these several groups will work jointly in the recruiting of physicians. It was stated that there is an urgent need of some 6,000 additional physicians before July 1st, and preferably 10,000 if they can be procured. All physicians within the present draft age are urged to submit an application for service to the State Chairman of Procurement and Assignment, who in turn will forward same to the recruiting officers for the state who will ask for immediate clearance of the applicants.

Commissions of first lieutenant and captain may be issued immediately following physical examination and approval of the candidates. General Hershey in his bulletin which has been submitted to all State Selective Service officials and to the local Boards, calls attention to the fact that physicians who have been classified III-A on account of dependents may be reclassified at I-A for they will all receive commissions and the pay should be adequate to care for families during the term of service.

It seems quite probable that before the end of the present year a total of 15,000 or more physicians will be required for our constantly growing army. All county committees on Procurement and Assignment should already have submitted to the office of the state Chairman a list of all physicians within the county giving the name, address, school of graduation, and other pertinent data which is transferred to cards in the Chairman's office with their notation as to "availability" or "essentiality" for easy reference.

All hospitals, sanitariums and clinical groups have also been requested to submit a list of their respective staff personnel giving similar data and statements relative to availability. Warning has been issued that younger men are eligible to call by Selective Service, and in every instance where possible, these younger physicians should be replaced by older men capable of doing similar work for the duration. Likewise all medical schools have been asked to submit

a list of all staff members and have been urged to see that their lists are "stream-lined" to make as many young physicians as possible available for military service.

The need is urgent and the physicians of Illinois will respond promptly and see that the required number of doctors are made available for all government needs. It has been stated that physicians who can qualify and who are not citizens of the United States may be accepted for enlistment in the Army and after three months service, may be made citizens and given commissions in the Medical Corps.

All Selective Service Boards have received this order from General Hershey, and are cooperating with the Procurement and Assignment Service and with the joint recruiting teams within the states in the general desire to procure immediately the number of physicians actually needed.

Additional information on this subject will be found in this issue of the Illinois Medical Journal in the department devoted to "Medicine and National Defense."

REPORT ON 1942 ANNUAL MEETING

The 1942 Annual Meeting of the Illinois State Medical Society was held in Springfield according to schedule, May 19, 20, 21. The meeting was well planned and well attended when proper consideration is given to the fact that many hundreds of members of this society are now in military service, and that many were not permitted to attend on account of increased work through the diminished number of physicians in the area, and with the present tire rationing program which prevented many driving to the meeting.

There were slightly more than 1300 registered during the three day session. More consideration was given this year to discussions of subjects of military nature, and the Wednesday morning joint program was devoted entirely to this subject. A number of prominent physicians were scheduled, including Dr. Frank H. Lahey of Boston, President of the American Medical Association, and Chairman of the Procurement and Assignment Service for Phys-

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Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.



Edward H. Weld, M.D.

President, Illinois State Medical Society
1942-1943

icians, Dentists and Veterinarians, and one of America's master surgeons.

In accordance with the custom of recent years, the Orations in Medicine and Surgery were delivered on Tuesday evening, May 19th. The Oration in Medicine was delivered by Cecil J. Watson, Professor of Internal Medicine, University of Minnesota Medical School, and his subject was "Macrocytic Anemia." Frank H. Lahey, Boston, delivered the Oration in Surgery, on the subject, "Surgical Management of Lesions of the Esophagus, Stomach, Rectum and Colon." The attendance for this Tuesday evening session was perhaps the largest that ever attended any program at annual meetings. Both Dr. Watson and Dr. Lahey participated in the Wednesday morning Joint Session, "Medicine and the War" which also was well attended.

The regular scientific meetings of the seven individual sections were well attended and greatly enjoyed by all those present. The technical exhibits were displayed in the Knights of Columbus Building, and most of those present at the meeting spent all available time showing their interest and appreciation in the efforts of the manufacturers of supplies and accessories used by the medical profession, for the fine work which has been done by them in recent years.

The Scientific exhibits were displayed in the nearby Elks Club, the large auditorium being used for this purpose. It was well filled with the many exhibits arranged under the supervision of J. P. Simonds as Director of Exhibits, and Frank J. Jirka as Chairman. The Committee on Awards had some difficulty in its efforts to judge properly those exhibits entitled to the several medals and certificates of merit.

Awards for exhibits

1st prize — Frederick H. Falls and Miss Charlotte Holt

Silver Medal — "Abortion"

2nd prize — James McCuskey and William Morginson

Bronze Medal — "Treatment of Epitheliomas with Combination of X-Ray and Destructive Procedures; Reports of Results with 600 Lesions."

3rd prize — Leo L. Hardt, L. H. Sloan and M. Weissman

Bronze Medal — "Gastroscopic Findings in Pulmonary Tuberculosis"

Certificates of Merit:

A. A. Mertz — "An Improved Method of Fixation of Fractures of the Neck of the Femur."

John D. Ellis and L. M. Marsh, "Sketetal Traction through Metacarpals."

British Library of Information, State of Illinois, Illinois Department of Public Health, "Health and War."

Other Meeting Highlights

The House of Delegates held the usual two meetings, the first on Tuesday afternoon, May 19th, and the second on Thursday morning, May 21. Much business was referred to the House for proper action, and the complete transactions will be published in the July Illinois Medical Journal.

Frank H. Lahey, President of the American Medical Association and Chairman of Procurement and Assignment Service for Physicians, Dentists and Veterinarians, addressed the House on Tuesday afternoon, telling of the urgent need for physicians in our Armed Forces at this time. A minimum of 6,000 is needed before July 1st. He told of the new procedure which has been adopted to avoid unnecessary delay in the approval of applications and the issuing of commissions through cooperation with the State Chairman of Procurement and Assignment, the County Committees and the newly created Recruiting Boards established in each state.

The usual elections were held on Thursday morning with the following results:

President-Elect — George W. Post, Chicago

First Vice-President — Hermon H. Cole, Springfield

Second Vice-President — Charles O. Lane, West Frankfort

Secretary-Treasurer — Harold M. Camp, Monmouth

L. E. Day, Chicago, Andy Hall, Mt. Vernon, and G. C. Otrich, Belleville, were elected Councilors of their respective districts for another term of three years, and Walter Stevenson, Quincy, was elected as Councilor for the Sixth District to replace T. B. Knox who desired to retire from the Council at this time.

Charles H. Phifer, J. J. Pflock, G. Henry

Mundt and R. K. Packard all of Chicago were re-elected as delegates to the A. M. A. for two years, and E. S. Hamilton, Kankakee, was re-elected as delegate for a similar period.

At the end of the second meeting of the House of Delegates, Edward H. Weld, Rockford, was inducted into the office of President by Charles H. Phifer, the retiring President. The House unanimously gave the retiring President a most hearty vote of thanks for his fine work during the past year.

A complete list of committees and other pertinent information will appear in the July Illinois Medical Journal.

The House of Delegates voted to hold the 1943 annual meeting in Chicago subject to the subsequent approval of the Council.

ILLINOIS PHYSICIANS IN SERVICE

At the present time, the record file in the office of the Secretary of the Illinois State Medical Society, shows the following men on active duty in some branch of our armed forces. We are all well aware that the following list is not complete, and that corrections, additions and deletions should be made. For that reason we are publishing this information in the Journal, and are asking that the medical profession of Illlinois, especially the officers of component county societies, cooperate with the Secretary in making this list an accurate record of the physicians now in service, and on active duty.

NAME & HOME ADDRESS	COUNTY
Abrams, Morris, Chicago	C. M. S.
Abt, Arthur F., Chicago	C. M. S.
Adler, Samuel, Oregon	Ogle
Ahroon, C. R., Bloomington	McLean
Allen, Harvey S., Chicago	C. M. S.
Allen, John B., Chicago	C. M. S.
Allen, Robert A., Chicago	C. M. S.
Altman, H. P., Marengo	McHenry
Ash, Alfred S.	Adams
Ashby, John S., Chicago	C. M. S.
Ashley, Richard, Chicago	C. M. S.
Athey, George L., Quincy	Adams
Baer, Walter H., Peoria	Peoria
Bailis, J. M., Pittsfield	Pike
Baker, Alonzo N., Marion	Williamson
Baker, Lyle L., Alton	Madison
Ball, O. H., Bloomington	McLean
Ball, Wilbur G., Bloomington	McLean
Ballin, Michael, Chicago	C. M. S.
Ballou, J. W., Rushville	Schuyler
Barker, M. Herbert, Chicago	C. M. S.
Bass, Howard H., Chicago	C. M. S.
Battaglia, Samuel, Chicago Heights	C. M. S.
Bay, Anthony, Chicago	C. M. S.
Beaton, Lindsey, Chicago	C. M. S.
Becker, Harry G.	Lake
Beinar, Peter J., Chicago	C. M. S.
Belmonte, John V., Chicago	C. M. S.
Berg, George, Chicago	C. M. S.
Bielinski, Brunon, Manteno	Kankakee
Blatchford, Frank W., Chicago	C. M. S.
Blocksom, B. H., Rockford	Winnebago
Bloom, Charles R., Chicago	C. M. S.
Boice, William A., Chicago	C. M. S.
Boland, J. D., Sterling	Whiteside
Bomze, Edward J., Chicago	C. M. S.
Boshes, Benjamin, Chicago	C. M. S.
Bowers, D. E., Peoria	Peoria
Bowman, Harold, S., Jacksonville	Morgan
Boyd, O. B., East St. Louis	St. Clair
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Boynton, M. W., Chicago	C. M. S.
Boyer, Richard C., Chicago	C. M. S.
Braceland, Francis J., Chicago	C. M. S.
Bradburn, George, Chicago	C. M. S.
Branch, Charles D., Peoria	Peoria
Braze, Alexander, Rockford	Winnebago
Breck, Merrick R., Chicago	C. M. S.
Brenner, Frank, Jr., Quincy	Adams
Brodsky, Abraham, Manteno	Kankakee
Brooks, L. C., Freeport	Stephenson
Brosin, Henry Walter, Chicago	C. M. S.

Brown, David, Manteno	Kankakee
Brown, Jack, Decatur	Macon
Bullock, N. C., Rockford	Winnebago
Bunchman, L. P., Clinton	DeWitt
Burack, Samuel, Kankakee	Kankakee
Burke, Jerome J., Chicago	C. M. S.
Burket, Walter C., Chicago	C. M. S.
Burley, R. D., Mt. Sterling	Cass
Burns, Edward M., Freeport	Stephenson
Butkus, Walter, Chicago Heights	C. M. S.
Cada, Edward G., Chicago	C. M. S.
Camp, Edward H., Chicago	C. M. S.
Campbell, Paul A., Chicago	C. M. S.
Capps, Richard B., Chicago	C. M. S.
Carlin, George W., Wilmington	Will-Grundy
Cherner, A. M., Chicago	C. M. S.
Choisser, John Elder, Harrisburg	Saline
Christenson, A. W., Rockford	Winnebago
Citron, Robert R., Peoria	Peoria
Cohen, Bernard, Chicago	C. M. S.
Cohen, Theodore, Chicago	C. M. S.
Cohler, B. C., Chicago	C. M. S.
Cohn, Arnold M., Pana	Christian
Cohn, Isadore, Chicago	C. M. S.
Cohrs, Clarence C., Chicago	C. M. S.
Collins, Harold J., LaHarpe	Hancock
Collins, R. Bruce, Rock Island	Rock Islan
Comer, Fay S., Cairo	Alexander
Comess, Oscar, Chicago	C. M. S.
Conley, Thomas J., Evanston	C. M. S.
Cooper, Leo Kenneth, Chicago	C. M. S.
Conner, James A., Chicago	C. M. S.
Corbus, Budd C., Jr., Chicago	C. M. S.
Costin, Max, Chicago	C. M. S.
Cox, E. H., Logan	Logan
Crout, G. T., Flanagan	Livingston
Crowder, Earl R., Chicago	C. M. S.
Curtis, George C., Chicago	C. M. S.
Czerwinski, Anthony, Springfield	Sangamon
Czwalinski, Peter, Chicago	C. M. S.
Dahlberg, A. V., Jr., Chicago	C. M. S.
Dashiel, Grayson F., Chicago	C. M. S.
Davenport, H. A., Chicago	C. M. S.
Davis, John L., Quincy	Adams
Davis, Landis Y., Baylis	Pike
Davis, W. J. N., Jr., Chicago	C. M. S.
Day, Howard, Waukegan	Lake
Day, Lawrence C., Grayslake	Lake
DeCosta, Edwin J., Chicago	C. M. S.
Dehnert, Ernst F., Evanston	C. M. S.
Dew, Walter A., Belleville	St. Clair
Dewhirst, E. M., Danville	Vermilion
Dickerman, H. S., Jr., Springfield	Sangamon
Dickey, M. M., Richmond	McHenry
Dietrich, E. F., Fithian	Vermilion
Dobin, Louis, Chicago	C. M. S.
Doktorsky, Abraham I., Chicago	C. M. S.
Dolan, P. T., Pittsfield	Pike
Dolph, I. E., Manito	Mason
Doud, Ernest A., Chicago	C. M. S.
Douglas, Thomas C., Chicago	C. M. S.
Drennan, George L., Jacksonville	Morgan
Dresner, Milton H., Chicago	C. M. S.
Droege, E. H., Granite City	Madison
Droegemueller, Wm., Chicago	C. M. S.
Dubiel, Charles R., Chicago	C. M. S.
Earle, Walter C., Champaign	Champaign
Easton, James, Chicago	C. M. S.
Eggers, John F., Sycamore	DeKalb
Ehlert, C. D., Alton	Madison
Ehrlich, Max C., Chicago	C. M. S.
Eisenstaedt, Werner F., Chicago	C. M. S.
Eisenstein, Harold, Chicago	C. M. S.
Eisenstein, Milton W., Chicago	C. M. S.
Elden, Harold, Chicago	C. M. S.
Elliott, Ralph A., Chicago	C. M. S.
Ellwood, Walter W., Chicago	C. M. S.
Endress, Fred C., Peoria	Peoria
Entin, Samson D., Chicago	C. M. S.
Epstein, Casper M., Chicago	C. M. S.
Eschelbacher, Leo	Jefferson-Hamilton
Ettleson, Abraham, Chicago	C. M. S.
Faden, Gerson, Moweaqua	Sangamon

Falk, Victor S., Urbana	Champaign
Faller, Adolph Jr., Chicago	C. M. S.
Fara, Frank J., Jr., Chicago	C. M. S.
Farinacci, Maurice G., Chicago	C. M. S.
Feinhandler, Harold S., Chicago	C. M. S.
Feldman, Abraham Wm., Chicago	C. M. S.
Feldman, Edward I., Kankakee	Kankakee
Felicelli, Nello M., Chicago	C. M. S.
Fey, David, Peoria	Peoria
Fiorito, Louis, Chicago	C. M. S.
Firoved, J. W., Monmouth	Warren
Fisher, Seymour, Springfield	Sangamon
Fishkin, Ben G., Chicago	C. M. S.
Fitz, Fred, Chicago	C. M. S.
Fitzgerald, Maurice D., Chicago	C. M. S.
Forrest, Thomas F., Woodstock	McHenry
Fort, Richard G., Chicago	C. M. S.
Fox, F. H., Arthur	Douglas
Fox, Robert G., Chicago	C. M. S.
Fox, Theodore A., Chicago	C. M. S.
Fox, William W., Lincoln	Livingston
Freeman, Gustave, Chicago	C. M. S.
Friedman, Harold S., Chicago	C. M. S.
Friedman, Townsend Baer, Chicag	C. M. S.
Frisch, Isaac J., Chicago	C. M. S.
Fruin, L. T., Normal	McLean
Fuqua, Samuel Agee, Chicago	C. M. S.
Gallagher, Edward J., Chicago	C. M. S.
Galloway, C. E., Evanston	C. M. S.
Gezon, Horace M., Chicago	C. M. S.
Gianturco, Cesare, Champaign	Champaign
Goldstein, Robert M., Chicago	C. M. S.
Goran, Joseph R., Erie	Whiteside
Gordon, H. S., Coal City	Will-Grundy
Gorvett, Edmund A., Chicago	C. M. S.
Graham, Charles M., Altona	Knox
Grandone, Joseph J., Gillespie	Macoupin
Greenberg, Leo J., Chicago	C. M. S.
Greene, Earle I., Chicago	C. M. S.
Greenspahn, Gerald M., Chicago	C. M. S.
Greenwood, L. S., Rockford	Winnebago
Greenwood, Robert C., Chicago	C. M. S.
Griffith, Paul R., Chicago	C. M. S.
Grossman, William, Manteno	Kankakee
Groth, Norton Robert, Chicago	C. M. S.
Gunther, A., Chicago	C. M. S.
Haedicke, Wm. David, Chicago	C. M. S.
Haerem, Alf T., Chicago	C. M. S.
Haffly, Gilbert N., Chicago	C. M. S.
Haftkowski, Dominic, Chicago	C. M. S.
Halevy, Arthur A., Chicago	C. M. S.
Hall, James W., Jr., Chicago	C. M. S.
Hall, Marshall Wesley, Mt. Vernon	Jefferson-Hamilton
Hamlin, Courtney, Rockford	Winnebago
Hanson, Martin F., Havana	Mason
Hantover, M. J.,	McLean
Harrison, Rollie M., Chicago	C. M. S.
Hawthorne, R. O., Kankakee	Kankakee
Hayes, J. M., Decatur	Macon
Hebenstrein, Kenneth W., Chicago	C. M. S.
Heskett, Byford F., Chicago	C. M. S.
Heyer, Howard E., Chicago	C. M. S.
Hick, Ford K.	C. M. S.
Hill, G. R., Fairfield	Wayne
Hill, Harold H., Chicago	C. M. S.
Hoebel, Fred G., Chicago	C. M. S.
Hoffstadt, John P., Chicago	C. M. S.
Holm, Alfred J., Chicago	C. M. S.
Hora, James L., Chicago	C. M. S.
Howe, Donnel C., Jr., Chicago	C. M. S.
Hurwitz, Paul, Chicago	C. M. S.
Hutchison, Wm. A., Chicago	C. M. S.
Jack, Nelson B., Decatur	Macon
Jackson, Edw. L., Chicago	C. M. S.
Jacobs, Henry, Spring Valley	Bureau
Jacobson, Herman A., Chicago	C. M. S.
Jacobson, Moses A., Chicago	C. M. S.
Janus, Arthur I., Chicago	C. M. S.
Jasinski, Casimir, Chicago	C. M. S.
Jeffries, Milo Easton, Chicago	C. M. S.
Jensen, Russell, Monmouth	Warren
Jesser, Joseph H., Chicago	C. M. S.
Johnson, Lester S., Chicago	C. M. S.
Johnstone, J. H., Eldorado	C. M. S.
Kahn, Jacob V., Chicago	Saline
Kaleta, Edward, Chicago	C. M. S.
Kanter, Aaron E., Chicago,	C. M. S.

Kanthak, Frank F., Chicago C. M. S.
Kaplan, Maurice, Chicago C. M. S.
Karabin, John E., Chicago C. M. S.
Kaske, G. J., Belvidere Boone
Kearns, Jerry J., Chicago C. M. S.
Kearns, John Edward, Jr., Chicag C. M. S.
Keigivin, Charles G., Chicago C. M. S.
Kernwein, Graham, Chicago C. M. S.
Kerr, Charles Roy, Chenoa McLean
Kerst, J. A., Springfield Sangamon
Ketterer, F. H., Breese Clinton
Kinne, A. Smith, West Chicago DuPage
Kinney, Raphael K. Lake
Knapp, Howard C., E. St. Louis St. Clair
Knewitz, Ralph W., Granite City Madison
Kocour, Elmer J., Chicago C. M. S.
Koenig, Frank, Normal McLean
Koransky, D. S., Chicago C. M. S.
Kram, David, Chicago C. M. S.
Kwinn, Frank C., Chicago C. M. S.

Lane, Paul L., Chicago C. M. S.
Lange, H. L., Belleville St. Clair
Langston, Hiram T., Chicago C. M. S.
Lassar, Gilbert N., Springfield Sangamon
Latimer, Earl G., Chicago C. M. S.
Lauer, David P., Chicago C. M. S.
Lebensohn, James E., Chicago C. M. S.
Lennon, Benj. B., Chicago C. M. S.
Lerner, David G., Chicago C. M. S.
Lerner, Louis, Chicago C. M. S.
LeRoy, George V., Chicago C. M. S.
Lery, A. J., Chicago C. M. S.
Less, Wm. M., Chicago C. M. S.
Levenson, Joseph M., Chicago C. M. S.
Lewis, David J., Springfield Sangamon
C. M. S.
Lewis, Robert Burns, Chicago C. M. S.
Lewy, Robert B., Chicago C. M. S.
Lieberthal, Frederick, Chicago C. M. S.
Lifschultz, Bernard, Chicago C. M. S.
Lindberg, Howard A., Chicago C. M. S.
Lindquist, John L., Chicago C. M. S.
Linn, Herman J., Chicago C. M. S.
Loar, Ralph R., Bloomington McLean
Logsdon, C. L., Mt. Sterling Cass
Longwell, Charles W., Nashville Washington
Looby, W. E., Highland Park Lake
Loring, Milton J. C. M. S.
Loritz, Anthony F., Chicago C. M. S.
Lounsbury, Frank, Chicago C. M. S.
Love, L. L., Christopher Franklin

Lubin, Jerome J., Chicago C. M. S.
Lueth, Harold C., Chicago C. M. S.
Lund, J. A., Paxton Ford

McAllister, Ralph G., DeKalb
McBean, James B., Chicago C. M. S.
McDonald, Ralph F., Chicago C. M. S.
McDowell, M. M., Danville Vermilion
McEwen, Ernest G., Chicago C. M. S.
McEwen, Kenneth W., Chicago C. M. S.
McGaughey, Wm. M., Chicago C. M. S.
McIntosh, J. Robert, Bloomington McLean
McNamara, Edward W., Chicago C. M. S.
McNertney, F. D., Bloomington McLean
MacDonald. Ralph F., Chicago C. M. S.
MacNamara, Homer P., Springfield Sangamon
Mailer, Andrew R., Galesburg Knox
Maller, Adolph, Chicago C. M. S.
Mammoser, Lambert F., Chicago C. M. S.
Markiewicz, Simon, Chicago C. M. S.
Markson, David E., Chicago C. M. S.
Marquardt, Theodore R., Elmhurst C. M. S.
Martin, F. R., Decatur Macon
Martin, John, Chicago C. M. S.
Mason, Michael L., Chicago C. M. S.
Matson, Kenneth L., Chicago C. M. S.
Mauzey, Armand J., Chicago C. M. S.
Mayer, Leo L., Chicago C. M. S.
Mazet, Robert, Jr., Springfield Sangamon
Mead, Newton C., Chicago C. M. S.
Meltzer, H. L., Clinton DeWitt
Mercer, Ray, Quincy Adams
Mergener, John Charles, Chicago C. M. S.
Messman, L. E., Onarga Iroquois
Mielcarek, Leonard, Chicago C. M. S.
Miller, Herbert P., Rock Island Rock Islan
Milles, George, Chicago C. M. S.
Mills, Morton J., Chicago C. M. S.
Moffatt, J. S., Byron Ogle
Mohart, John H., Chicago C. M. S.
Monroe, Clarence W., Chicago C. M. S.
Monroe, Stanley E., Evanston C. M. S.
Moore, Bert, Canville Vermilion
Moore, G. E. Morgan
Moore, Lawrence Franklin
Moore, Rollin S., Streator LaSalle
Morrey, Robert C., Chicago C. M. S.
Mullen, Timothy, Seneca LaSalle
Murfin, Maurice, Decatur Macon
Murphy, T. J., Decatur Macon
Murray, D. E., Chicago C. M. S.

Nagel, Frank E., Chicago	C. M. S.
Nelson, Tell, Chicago	C. M. S.
Nesselrod, J. P., Evanston	C. M. S.
Nesseman, A. C., Waukegan	C. M. S.
Newell, Robert H., Chicago	C. M. S.
Nieder, Samuel, Gilman	C. M. S.
Nixon-Davis, W. J., Jr., Chicago	C. M. S.
Norbury, Frank Garm, Jacksonville	C. M. S.
Norris, Harold V., Jacksonville	Wayne
Olmsted, Randolph F., Chicago	C. M. S.
Olson, C. P., Rockford	C. M. S.
O'Neil, Hugh B., Chicago	C. M. S.
Olwin, John, Chicago	DeWitt
Orcutt, Wm. H., Chicago	Rock Island
Palmer, W. H., Rockford	Champaign
Parker, F. C., Danville	McHenry
Parker, Harry J., Chicago	Lake
Pearson, E. F., Springfield	C. M. S.
Pickett, William J., Chicago	C. M. S.
Pollack, S., Chicago	C. M. S.
Pollock, Fred, Chicago	C. M. S.
Post, John, Chicago	C. M. S.
Potter, Charles Chandler, Alton	C. M. S.
Prempos, Thomas G., Chicago	C. M. S.
Price, Harold, Chicago	C. M. S.
Pritikin, Roland I., Chicago	Lake
Puntenney, Irving, Chicago	C. M. S.
Przygocki, S. F., Chicago	Iroquois
Queen, Frank B., Chicago	C. M. S.
Quin, Jeremiah, Chicago	Morgan
Raber, Paul A., Chicago	Morgan
Raider, Jack H., Chicago	C. M. S.
Rainey, C. W., Chicago	Winnebago
Rand, George L., Chicago	C. M. S.
Ransom, G. T., Fairfield	C. M. S.
Ransom, Stephen W., Jr., Chicago	C. M. S.
Rest, David, Chicago	Winnebago
Restarski, Alvin F., Chicago	Vermilion
Rhea, Keith, Clinton	C. M. S.
Richman, S. H., Rock Island	Sangamon
Ricketts, F. J., Sadorus	C. M. S.
Ricketts, J. A., Woodstock	C. M. S.
Robbins, R. H., Waukegan	C. M. S.
Roberts, Ralph C., Chicago	C. M. S.
Robinson, Harry M., Chicago	Madison
Rocco, Paul C., Chicago	C. M. S.
Romano, John E., Chicago	C. M. S.
Romanski, Arthur F., Chicago	C. M. S.
Rosanova, Albert R., Chicago	C. M. S.
Rose, Fred E., Jr., Millstadt	St. Clair
Rosenblum, Alfred H., Chicago	C. M. S.
Rosengard, J. L., Chicago	C. M. S.
Rosenthal, Irving H., Chicago	C. M. S.
Rosenthal, Martin J., LaSalle	LaSalle
Ross, Donald, Chicago	C. M. S.
Ross, Perry W., Chicago	C. M. S.
Rubenstein, H. I., Chicago	C. M. S.
Rubin, Simon S., Chicago	C. M. S.
Rubovitz, Frank E., Jr., Chicago	C. M. S.
Russell, A. S., Urbana	Champaign
Rutledge, J. H., Nebo	Peoria
Ryan, H. E., Centralia	Marion
Sala, R. O., Rock Island	Rock Island
Salzman, J. M., Springfield	Sangamon
Sarkissian, S. D., Chicago	C. M. S.
Sarma, P. J., Chicago	C. M. S.
Saunders, H. Prather, Chicago	C. M. S.
Sawyer, Preston, Fairmount	Vermilion
Saxon, M. R., Aurora	Kane
Schiff, Jos. M., Chicago	C. M. S.
Schoolman, Joseph G., Chicago	C. M. S.
Schowengerdt, W. H., Champaign	Champaign
Schultz, Abraham, Chicago	C. M. S.
Schwartz, Louis, Manteno	Kankakee
Scott, W. E.,	McLean
Scars, K. M., Aurora	Kane
Seed, Lindon, Chicago	C. M. S.
Segenreich, Harry, Manteno	Kankakee
Seifert, E. H., Galesburg	Knox
Serota, Herman, Chicago	C. M. S.
Sexton, G. A.	Piatt
Shagam, Robert M., Chicago	C. M. S.
Shallenberger, P. L., Chicago	C. M. S.
Shapiro, Fred, Chicago	C. M. S.
Shapiro, Louis, Manteno	Kankakee
Sheehe, N. L., Rockford	Winnebago
Shinglemen, Willard E., Chicago	C. M. S.
Siegel, Irving, Chicago	C. M. S.
Simon, S. Wm., Chicago	C. M. S.
Sinaiko, Russell P., Chicago	C. M. S.
Singer, John D., Chicago	C. M. S.
Sintzel, A. R., Belleville	St. Clair
Smith, C. R., Villa Grove	Douglas
Smith, Durand, Chicago	C. M. S.
Smith, Edward C., Chicago	C. M. S.
Smith, William W., Waukegan	Lake
Solomon, Samuel J., Chicago	C. M. S.
Sondag, R. F., E. St. Louis	St. Clair
Sours, James W., Peoria	Peoria

Spector, Israel H., Chicago	C. M. S.
Spellberg, Mitchell A., Chicago	C. M. S.
Spinka, Isadore, Manteno	Kankakee
Stein, Albert F., Chicago	C. M. S.
Stein, Emil J., Chicago	C. M. S.
Stein, Justin J., Elmhurst	C. M. S.
Steinert, Theodore, Chicago	C. M. S.
Steinhoff, Carl F., Chicago	C. M. S.
Sternberg, Thos. H., Peoria	Peoria
Stettauer, J. Lewis, Chicago	C. M. S.
Stoll, John E., Chicago	C. M. S.
Stotz, Kenneth F., Chicago	C. M. S.
Stubblefield, H. I., Macomb	McDonough
Stuteville, Orion H., Chicago	C. M. S.
Sugar, Hyman Saul, Chicago	C. M. S.
Summers, Thomas F., Olney	Richland
Sutton, Charles F., Chillicothe	Peoria
Sweeney, Leo P. A., Chicago	C. M. S.
Talbot, Charles G., Chicago	C. M. S.
Teasley, B. C., Jr., Robinson	Crawford
Telford, E. W.,	DeKalb
Tevorek, Foy F., Chicago	C. M. S.
Thomas, Morris, Chicago	C. M. S.
Thornburg, W. M., DuQuoin	Perry
Thrift, Chester N., Chicago	C. M. S.
Thurston, E. W., Chicago	C. M. S.
Tindall, F. G., Rockford	Winnebago
Tinsley, Milton, Chicago	C. M. S.
Tobin, Walter W., Chicago	C. M. S.
Trapp, Robert N., Lincoln	Logan
Tresley, Ira J., Chicago	C. M. S.
Trotter, J. D., Carthage	Hancock
Tulsky, Alex S., Chicago	C. M. S.
Turnbull, George C., Chicago	C. M. S.
Turow, Irving L., Bartonville	Peoria
Urist, Maurice, Manteno	Kankakee
Vacante, Anthony, Chicago	C. M. S.
Vermeren, John Cyrille, Chicago	C. M. S.
Veseen, Leslie L., Chicago	C. M. S.
Vorisek, E. A., Chicago	C. M. S.
Wade, Chester, Chicago	C. M. S.
Wagner, Arnold, Chicago	C. M. S.
Wagner, David H., Chicago	C. M. S.
Wald, Sidney Irving, DuQuoin	Perry
Walker, William D., Ashley	Washington
Waller, James B., Decatur	Macon
Walsh, Eugene L., Chicago	C. M. S.
Walsh, Thomas G., Chicago	C. M. S.
Ward, Edward J., Peoria	Peoria
Washington, John C., Chicago	C. M. S.
Waud, Sidney, Chicago	C. M. S.
Wedral, Jerry W., Chicago	C. M. S.
Weinberg, Charles, Chicago	C. M. S.
Weiner, Harry I., Chicago	C. M. S.
Westenberger, L. H., Chicago	C. M. S.
Wien, Norman, Chicago	C. M. S.
Williamson, H., Danville	Vermilion
Willis, David A., Chicago	C. M. S.
Wilson, Clyde S., Belleville	St. Clair
Wiltrakis, Geo. A., Alton	Madison
Wittenberg, C. E., Danvers	McLean
Wojcik, S. J.,	Lee
Wolff, Luther F., Chicago	C. M. S.
Wolin, Irving, Chicago	C. M. S.
Wolters, Simon L., Chicago	C. M. S.
Wrist, Maurice, Kankakee	Kankakee
Yellen, Harry J., Chicago	C. M. S.
Young, L. W., Fairfield	Wayne
Young, Richard Hale, Chicago	C. M. S.
Young, Samuel, Chicago	C. M. S.
Zarcone, V. P., Decatur	Macon
Zelik, Wm. B., Lincoln	Logan
Ziegler, D. F., Chicago	C. M. S.
Zimmerman, L. E., Harvard	McHenry
Zolt, Nathan, Chicago	C. M. S.

CHOLAGOGUE AND CHOLERETIC EFFECTS OF BILE ACIDS AS COMPARED WITH OLEIC ACID

(E. W. Lipschultz & I. A. Feder, Brooklyn, in *Amer. Jl. Dig. Dis.*, May)

The cholagogue effect on the gallbladder of ten normals of 0.5 grams of (a) bile acid, and (b) oleic acid by mouth in a gelatine capsule, followed by water, was observed on different days by duodenal drainage and cholecystography.

The choleretic effect of these two drugs was studied on the same ten subjects on different days by means of transduodenal drainage.

Cholecystographic studies made on the same ten subjects one and two hours after ingestion of (a) 0.5 grams of bile acids and (b) 5 c.c. of oleic acid, on different days closely corroborated the results obtained with duodenal drainage.

Two of the ten subjects showed gallbladder emptying when bile acids were used. When oleic acid was used, nine of the ten subjects showed gallbladder emptying, manifesting itself in partial or total disappearance of the gallbladder shadow.

Our observations indicate the oleic acid possesses choleretic properties.

Correspondence

FIFTY YEAR CLUB LUNCHEON REPORT

The Fifty Year Club, Illinois State Medical Society, met at the Abraham Lincoln Hotel, Springfield, Illinois at a noon luncheon, May 20, 1942. Dr. Andy Hall, Chairman of the Fifty Year Club, presided. After introductory remarks by Dr. Hall, Dr. Carl Black of Jacksonville, Illinois was introduced and gave a very interesting address. Following Dr. Black, Dr. W. A. Evans of Aberdeen, Mississippi was introduced and delivered a most interesting address. Dr. Thomas J. Hilliard, of Fairfield, Illinois, another Fifty Year member, gave a very interesting account of one of the early physicians, his diagnosis and treatment of certain ailments. Dr. James Hutton, ex-president of the Illinois State Medical Society and Dr. John Nagel, Councilor of the State Medical Society were visitors and addressed the group.

Dr. Carl Black, who has been deeply interested in this organization, and whose hobby for many years, has been the collection of photographs of early physicians, displayed photographs of more than 100 Fifty Year men. Dr. Black stated that he has at the present time photographs of more than 4000 physicians — the largest collection known in the United States. He stated that he would like for his collection to be turned over to the Ilinois Historical Society where they could be securely preserved at Springfield.

It was the concensus of opinion that this banquet should be an annual affair, held at the time and place of the Illinois State Medical meeting.

Besides a number of visitors, the following Fifty Year Men were present:

Dr. Ralph Wheeler, 446 Oakdale Ave., Chicago, Ill.
Dr. H. S. Bossart, Buckley, Ill.
Dr. Cornelius Mackey, 7359 Vernon Ave., Chicago, Ill.
Dr. Monroe Etherton, Carbondale, Ill.
Dr. T. J. Hilliard, Fairfield, Ill.
Dr. F. L. Wakefield, Hayworth, Ill.
Dr. A. L. Adams, Jacksonville, Ill.
Dr. Albert Lyles, Virginia, Ill.
Dr. Julian W. Zinn, Kramer, Indiana
Dr. Edward D. Howland, 843 W. Belden Ave., Chicago, Ill.
Dr. W. W. Williams, Quincy, Ill.
Dr. A. P. Hedges, 5840 Kenmore Ave., Chicago, Ill.
Dr. H. L. Kampen, Monmouth, Ill.
Dr. Carl E. Black, Jacksonville, Ill.
Dr. B. E. Twitchell, Belleville, Ill.
Dr. W. A. Evans, Aberdeen, Mississippi
Dr. E. B. Montgomery, Quincy, Ill.
Dr. Clifford U. Collins, Peoria, Ill.
Dr. F. M. Anderson, Decatur, Ill.
Dr. James A. Day, Springfield, Ill.
Dr. Perry H. Stoops, Ipava, Ill.
Dr. Silas McClelland, Decatur, Ill.
Dr. W. T. McLean, Maroa, Ill.
Dr. George E. Southwick, Chatham, Ill.
Dr. U. G. Darling, 619 Addison St., Chicago Ill.
Dr. H. O. Munson, Rushville, Ill.
Dr. J. C. Roberts, Peoria, Ill.
Dr. A. A. Knapp, Peoria, Ill.
Dr. George A. Dicus, Streator, Ill.
Dr. C. W. Cargill, Mason City, Ill.

Dr. J. W. Bitter, Quincy, Ill.
Dr. J. P. Roark, Bushnell, Ill.
Andy Hall, M.D., Chairman
Fifty Year Club

MEDICAL OFFICERS FROM ILLINOIS PROMOTED

Promotion of three Army Medical Corps Officers, on active duty at Sixth Corps Area headquarters in Chicago, was announced by Major General George Grunert, Commanding General of the Corps Area. All are residents of Chicago.

They are:

Captain James W. Hall, Jr., to Major. Major Hall, who resides at 8114 Euclid Avenue entered active duty February 14, 1941.

1st Lieutenant Laurence S. Jennings to Captain. Captain Jennings, a resident of 1440 East 52nd Street, was ordered to duty September 8, 1941.

1st Lieutenant James H. De Weerd to Captain. A resident of 6104 South Woodlawn Avenue and a native of Grand Rapids, Michigan, Captain De Weerd has been on duty since November 19, 1941.

AMERICAN UROLOGICAL ASSOCIATION

The Western Branch of the American Urological Association will hold its annual convention this year at Hotel Del Monte, California, from June 22 to June 24.

WARNING ON 'ATHLETE'S FOOT' TREATMENT

Until the conclusion of studies to determine the extent of the causticity of a mixture of phenol and camphor, recently hailed as "A Working Cure for Athlete's Foot," and its possible benefits and dangers, "treatment of 'athlete's foot,' ringworm and other fungous infections (with this mixture) or any other potent remedies is best intrusted to the qualified physician," *The Journal of the American Medical Association* warns in its May 9 issue. It has been warned that the mixture should not be applied to a wet skin since water has been reported to make it caustic.

Pointing out that most cases of fungous infection require persistent skilful attenion if the disease is to be brought under complete control, *The Journal* says that "Recommendation that untrained people use on themselves an agent which has the potential danger of causticity is highly doubtful."

REPORT FIRST AMERICAN CASE OF CYST IN FINGER JOINT

The first American case and the sixth in medical literature of an epithelial (outer skin and mucous membrane covering) cyst enclosed in the bony part of an end joint of a finger is reported in *The Journal of the American Medical Association* by Samuel C. Yachnin, M.D., Passaic, N. J., and Frederick Summerill, M.D., Middletown, N. Y.

They say there are two possible explanations of its origin, either congenital malformation with misplacement of the epithelial cells during the embryo stage of life, or an injury which implants the cells in the bony structure.

In each of the 6 cases reported there was a history of a crushing or penetrating injury which damaged the nail bed. C. Friedländer, the proponent of the first theory, claims that the misplaced cells are stimulated to growth by injury. However, Drs. Yachnin and Summerill state that "it is difficult to accept the view of congenital origin, for trauma (injury) was a constant finding. . . . We feel, therefore, that these tumors are caused by the implantation of epithelial cells into the bone as a result of the injury. This could take place through the smallest kind of a fracture or even by transmission along the vascular channels. . . . The rate of growth of the tumor appears to be quite slow. In 4 cases the injury was sustained from thirteen to fourteen years before the appearance of symptoms, while in Friedländer's case the interval was one year and in our case two years. . . . No recurrence has been reported following treatment by amuptation."

SELECTION OF BLOOD BANK DONORS

Only those persons who have been born in this country and who have never lived in districts where malaria is prevalent should be used as donors for blood banks, Ernest F. Gordon, M.D., Yonkers, N. Y., advises in *The Journal of the American Medical Association*. He says that such a policy will minimize the possibility of spreading the disease from man to man. The first recorded case of an accidental transmission of malaria through transfused stored blood is reported by him.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

This column has not commented during the year on the proposed plans that have been discussed in the Journal and were contained in the Committees report relative to medical care for the recipients of old age assistance and assistance to dependent children.

While we have recognized, that this is an economic problem of the physicians who render this care we have felt that the Committee appointed to study this problem and work out the plan were eminently fitted for the task. They have devoted a great deal of time to this study as evidenced by their work. Inasmuch as the House of Delegates did not approve the report or the report of the Reference Committee comment at this time can be made.

The Social Security Act, as amended, provides for assistance to the old age and dependent children with no specific plan for their medical care. The old age group is constantly increasing as evidenced by the fact, that during the last twenty years, those reaching the age of sixty have increased from two to eight per cent so that approximately 10,000,000 people in the United States are past sixty years of age. Probably ninety-five per cent of these people are either totally or partially indigent. The assistance granted was largely to provide either food, clothing and shelter or all three. The proportion of these people that lost their savings for old age during the last depression cannot be determined, and undoubtedly a percentage of them fall into this group. However, previous observations have estimated that ninety-five per cent of the people reaching the age of sixty are either totally or partially indigent. In the past these people were either cared for by their children, relatives or state or county poor farms. The Social Security Act attempts to relieve the latter, and obviously has created a condition where relatives are reluctant to make contributions as they did in the past.

As the length of life increases the number receiving assistance will necessarily increase and we ponder over the possibility as to whether many people will cease in their determination to provide for themselves in their old age, and rely on increasing Federal help. With the dependent children the situation is somewhat different because the money expended is in an effort to help them so that eventually they will be able to provide for themselves and not be a burden on the state.

Allowances for assistance for food, clothing and shelter can be somewhat definitely established while the allowances for medical care cannot be established due to the fact that there will be a wide variation in the incidence of disease among this group.

It is evident from the plan proposed that there will be a large amount of clerical work necessary for that portion relating to medical care, and it may be possible that the expenses for clerical work and investigators will equal the amount paid for medical care. The forms as proposed for the doctors to fill out take condsiderable time, on their part, and likewise must consume considerable time at the other end of the investigation and final disposition. The fees established seem reasonable and the question of mileage is undoubtedly debatable. The important thing is that some program be adopted that

will render efficient medical care to this group, and undoubtedly the medical profession will have to contribute to this program, as they have always contributed to it in the past even before the Social Security Act made any provision.

The resolution introduced before the House of Delegates, asking the American Medical Association to appoint a liaison committee to collaborate with the Social Security Board to the end that this program may be worked equitable for all the states in the union, should receive careful consideration.

In the meantime it would seem for the best interest of the medical society and the recipients of this assistance that the present program, as worked out by the Committee and the Department of Public Health, should be adhered to until such time as a better program can be established.

It would seem unwise to appoint an entire new Committee which would necessarily have to go over much of the study and the work before they could acquaint themselves with the many problems that exists in this program. The present Committee and Council have given much thought and study to this program and the profession at large has reason to have confidence in their final disposition of the matter.

R. K. Packard, M. D.
Chairman
Committee on Medical Economics.

VITAMIN FILMS IN COLOR

Eli Lilly and Company, Indianapolis, announces the release of three 16-mm. silent motion pictures in color descriptive of vitamin deficiency diseases. The films are available to physicians for showing before medical societies and hospital staffs. One deals with thiamine chloride deficiency, one with nicotinic acid deficiency, and the third with ariboflavinosis. The major part of all films concerns the clinical picture presented by the patient with reference to treatment by diet and specific medication. They do not contain advertising of any description, nor is the name of Eli Lilly and Company mentioned.

The films were made at the Nutrition Clinic of the University of Cincinnati at the Hillman Hospital, Birmingham, Alabama, where studies were initiated in 1935, under the joint auspices of the Department of Internal Medicine of the University of Cincinnati and the University Hospitals of Cleveland. Subsequently, these investigations became a co-operative project between the Departments of Medicine of the University of Cincinnati and the University of Alabama, and the Department of Preventive Medicine and Public Health of the University of Texas.

EPILEPTICS IN AIR RAIDS

During the last few months there have been opportunities to observe the effect of unpleasant emotion on a group of about 250 epileptic children and 200 adults. The group comprises people of normal or retarded intelligence, but not of low-grade mental defect. There were days last summer of considerable air activity with fighting directly overhead and planes brought down in the immediate neighbourhood. There was no general increase of attacks on days or nights of air activity, nor has any evidence been found of increased fits in individuals. At least 95% of our patients have to all appearances been unperturbed, and the resultant mental upset in the remainder has not been striking. Are they heroes or stoics? Probably the latter. It may be suggested that many of them have increased resistance to painful mental impressions, as they undoubtedly have to painful physical impression, a resistance that is no doubt aided by defective imagination; but this is not altogether consistent with the hypersensitiveness which is claimed as a cardinal feature of the epileptic temperament. A further factor may be found in medication. Most of our patients are having anticonvulsant drugs in moderate doses, rarely exceeding bromide, gr. 30, or phenobarbital, gr. 2, in the 24 hours, and these have no doubt helped to discourage extra fits or mental upset. It need scarcely be said, perhaps, that the staff has had impressed on them the importance of appearing unconcerned in the face of danger, for our patients, with their immature outlook on life, will be more prone than other people to take their cue from those in authority. Moreover it must be said that although the noises, alarums and excursions without seemed sometimes to be very close at hand, so far we have not experienced (apart from a few broken windows and damaged tiles) any actual damage to person or property. Perhaps events so far have kept outside the circumference of the epileptic's well-known egocentricity. Bring them a little nearer home, and the results may be different.

So far as it goes, however, our experience has shown that acute emotional stress is without effect on the incidence of fits in people suffering from epilepsy, and gives rise to surprisingly little mental upset.

—J. Tylor Fox, M. D., The Lancet, May 17, 1941.

Medicine and National Defense

NEW METHOD FOR IMMEDIATE RECRUITMENT OF MEDICAL OFFICERS

The army has streamlined its method of commissioning medical officers. Five thousand physicians are needed at once. Eleven thousand additional will be needed by Dec. 31, 1942. Army officers' recruiting boards will proceed at once to the office of each state chairman for physicans of the Procurement and Assignment Service, to get in touch with physicians personally and commission them immediately.

INSTRUCTIONS FOR PHYSICIANS WISHING TO ENLIST

1. Return the procurement and assignment enrolment form and questionnaire which reached you last week. If you didn't get one, write immediately to the National Roster of Scientific and Specialized Personnel, 916 G Street N. W., Washington, D. C., for your forms.

2. Contact your state chairman of physicians for Procurement and Assignment Service at once, stating that you want to get into the service. Do this regardless of whether or not you have written to the Washington office of the Procurement and Assignment Service or the Surgeon General or have enrolled on the emergency enrolment form of last December. If you applied for commission more than thirty days ago, tell the state chairman you want to see the recruiting board. In Illinois — state chairman is Harold M. Camp, M.D., Monmouth.

3. The Surgeon General will not commission a physician unless he is certified as available by his state chairman of physicians for the Procurement and Assignment Service.

HOW COMMISIONS WILL BE SECURED

1. The Surgeon General and the Adjutant General have named teams of two officers and two clerks, who will procure the names of all available physicians who have volunteered from the state chairman for physicians of the Procurement and Assignment Service in your state.

2. These teams will have the authority to make final decisions on the application forms, to procure and make final decisions on the physical findings and to administer the oath of office immediately to those who qualify physically and professionally who are under the age of 45 and who are to be given the rank of lieutenant or captain.

3. These teams have the authority to initiate the applications and physical examinations and forward the papers with their recommendations direct to the Surgeon General for commission for all physicians under the age of 45 who might apparently be qualified for rank above that of captain.

4. These teams have the authority to initiate the applications and physical examinations and to forward to the Surgeon General direct the papers and their recommendations on all physicians 45 to 54 inclusive. The Surgeon General will make the final decisions and commission those for whom there are vacancies in this age group.

WHAT RANK MAY BE EXPECTED?

In order that all concerned in the procurement of additional medical department officers may give uniform advice to all applicants, the following summary of the policies which broadly govern the recommendations to be made to the

Adjutant General are published for your information and guidance:

(a) Basic Considerations.—(1) Appointments in the Army of the United States (medical department) will be recommended by the Surgeon General to fill authorized position vacancies for which no qualified medical department officers are available. The recommended applicants must possess the special qualifications required for such positions.

(2) Since no training or experience in civil life is analogous to that afforded by active military duty, no initial appointments will be recommended in grades above the lowest for assignment to tactical units.

(3) Position vacancies calling for grades above the lowest will, so far as possible, be filled by the promotion of qualified officers on active duty.

(b) Policy Governing Grades for Various Sections. —(1) Medical Corps: All appointments will be recommended in the grade of first lieutenant with the following exceptions:

(a) Captain: 1. Eligible applicants between the ages of 37 and 45 will be appointed in the grade of captain by reason of their age and general unclassified medical training and experience.

2. Below the age of 37 the following recognized training and experience will be considered in recommending initial appointments in the grade of captain: certification by an American speciality board; fellowship, American College of Surgeons or American College of Physicians; membership in other nationally recognized qualifying society or association, or the formal hospital training equivalent to that required by an American speciality board or other recognized training appropriate to the assignment for which recommended.

3. Eligible applicants who previously held commissions in the grade of captain in the Medical Corps (Regular Army, National Guard of the United States, Officers' Reserve Corps) may be appointed in that grade provided they have not passed the age of 45.

(b) Major: 1. Eligible applicants between the ages of 37 and 55 for whom there exist appropriate position vacancies, who are qualified for appointment as captain as outlined in paragraph (1) (a)2 and whose additional training and experience justify initial assignment as chief of service or section or executive officer in a large military hospital or other appropriate position, may be appointed in the grade of major.

2. Applicants previously commissioned as major in the Medical Corps (Regular Army, National Guard of the United States, Officers' Reserve Corps) whose training and experience qualify them for an appropriate assignment may be appointed in the grade of major, provided they have not passed the age of 55.

Rate of Pay

	With Dependents	Without Dependents
Lieutenant Colonel	$5,588	$4,676
Major	4,848	3,936
Captain	3,792	3,336
First Lieutenant	3,152	2,696
Second Lieutenant	2,196	2,196

(c) Lieutenant Colonel and Colonel: 1. In view of the small number of assignment vacancies in the grades of lieutenant colonel and colonel and the large number of reserve officers of these grades who have not been ordered to active duty, such appointments will be limited to specially qaulified applicants required for specific position vacancies which cannot be filled by promotion or by the activation of qualified reserve officers.

Note.—*a.* There are in the age group 24-45 more than a sufficient number of eligible qualified physicians to meet medical department requirements. It is on this age group that the Congress, through the Selective Service Act, has imposed the definite obligation of military service. Applicants beyond this age will be considered for appointment only if they possess the special qualifications required for assignment to positions appropriate for the grade of major or above,

b. Appointments for assignment to affiliated medical department units are made under special War Department authorization, and in grades authorized by appropriate tables of organization on recommendation of the authorities of the sponsoring institutions.

HOW SOON MAY ONE EXPECT TO ENTER SERVICE?

Immediate cooperation with the officers' re-

cruiting boards will result in a commission sooner than it could otherwise be obtained. A slightly longer period of time will obtain in the case of those referred to the Surgeon General for decision. In each case a period of fourteen days is granted between the administration of oath of office and the date of reporting for duty. If an officer desires to report before this fourteen day period has expired, he may do so by appropriate statement to the recruiting board. It is advised that no steps be taken to close one's office until after one has taken the oath of office.

Sam F. Seeley, M. D.,
Executive Officer,
Procurement and Assignment Service.

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FROM SELECTIVE SERVICE SYSTEM

According to new instructions received from Washington, medical doctors must expect to serve in the armed forces of the Nation unless civilian or industrial needs or an extreme dependency status indicates retention in civilian life, it was announced by Col. Paul G. Armstrong, Illinois director of selective service.

"The shortage of these professional men has become seriously acute since war was declared," stated Colonel Armstrong, "and there is no question now that every qualified doctor must serve where he can render the greatest professional service to the Nation. The need of medical manpower in the Army is so urgent that it will work to the individual advantage of all doctors of military ages to take immediate steps to procure Army commissions."

It was further pointed out that each local board will be instructed that, if it finds that a physician within the military ages should not be deferred for reasons other than dependency, it shall take into consideration the pay and allowances such a registrant would receive in the event he is commissioned in the armed forces and proceed to classify him. It is expected that, in practically all such cases, the amount he would receive from commissioned service will be sufficient to eliminate the question of dependency.

The new instructions involve a change from Corps Area Committee of Procurement and Assignment Service to separate State Chairmen and also provide that the local boards will consult with the respective State Chairmen of the Procurement and Assignment Service before classifying a doctor. The chairman for Illinois is Dr. Harold M. Camp, 224 South Main Street, Monmouth.

Major E. Mann Hartlett, State Medical Officer.

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FROM WAR DEPARTMENT MEDICAL DEPARTMENT OFFICER RECRUITING BOARD

THE PRESENT STATUS OF THE PROCUREMENT OF MEDICAL OFFICERS FOR THE UNITED STATES ARMY

The necessity of securing medical officers for the military and naval services, and at the same time of insuring that no community would be stripped of essential medical personnel, led to the organization of the Procurement and Assignment Service. This Service determines which of the professional men are essential to the health and welfare of their community and clears for military service all medical men who are not essential in the above sense.

In order that physicians may be more quickly brought into the Army, to overcome an acute shortage, and to provide for present and future military requirements, the War Department has established in the several states Medical Department Officer Recruiting Boards. The primary function of the Medical Department Officer Recruiting Board, which in this state is located at 30 North Michigan Boulevard, Chicago, Illinois, is to seek applications for commissions in the Medical Corps from doctors who are declared available by the Procurement and Assignment Service. In addition, this Board is authorized to actually issue commissions in the grade of Captain and 1st Lieutenant to doctors in the age bracket of 21 to 44 inclusive.

The procedure in making application for a commission in the Medical Corps is as follows:

1. *Write* the Medical Department Officer Recruiting Board, 30 North Michigan Bouelvard, Chicago, Illinois, requesting application blanks and authorization to take a physical examination: This is the only office where Medical Corps applicants will be interviewed.

2. Application blanks will be sent to you immediately. Obtain the physical examination at

the military post designated in the authorization which you will receive.

3. Promptly return your application to the Medical Department Officer Recruiting Board. A report of your physical examination will be mailed directly to the Board by the military post where it is accomplished.

The Board will assemble all required papers from all sources and notify you to appear personally to discuss your application and receive your commission.

Adequate time will be allowed newly commissioned officers to permit them to arrange their personal affairs before being ordered to duty.

The rank a doctor may receive will depend upon his age, training, experience and qualifications. The Board will carefully evaluate these factors in the case of each applicant. Certain regulations are laid down by the War Department in regard to rank. These regulations do not permit of bargaining on the part of the applicant for higher grades as compensation for immediate application. Contrary to opinion prevalent in some circles it will not be possible to secure higher grades by waiting until some future date before seeking a commission. Conversely, if a doctor is drafted he will serve initially as an enlisted man.

Selective Service has recently ruled that dependency is not a basis of deferment in cases where registrants are eligible to receive commissions in the armed forces.

This Nation is at war; there is an acute shortage of physicians for the present and future needs of the armed forces; the procedure of obtaining a commission has been simplified: and so it is incubent upon each and every available physician between 21 and 44 to apply for a commission in the military forces. If you are requested by the Medical Department Officer Recruiting Board to make such application you will know that you have been declared available by the Procurement and Assignment Service and you are urged to seek a commission without delay.

R. F. Olmsted, Lt. Col. Medical Corps, U. S. Army. Room 828, 30 No. Michigan Ave., Chicago.

OCCUPATIONAL DEFERMENTS OF DOCTORS, DENTISTS AND VETERINARIANS

The following memorandum (I-420) was sent to all state directors by Lewis B. Hershey, director of the Selective Service System, Washington, D. C. This amendment involves a change from Corps Area Committee of Procurement and Assignment Service to separate state chairmen for medical doctors, dentists and doctors of veterinary medicine and also a change with respect to the consideration of dependency in classifying such registrants.

NATIONAL HEADQARTERS
SELECTIVE SERVICE SYSTEM
21st Street and C Street N. W.
Washington, D. C.

January 28, 1942
Amended 4/28/42

MEMORANDUM TO ALL STATE DIRECTORS (I-363)
LOCAL BOARD RELEASE (89)

SUBJECT: Occupational Deferments of Medical Doctors, Dentists and Doctors of Veterinary Medicine (III).

1. Information previously distributed by this headquarters clearly indicates an overall shortage of medical doctors, dentists and doctors of veterinary medicine in the nation. Since war was declared, the shortage of these professional men has become acute. It is now manifest that every qualified doctor, dentist and veterinarian must serve where he can render the greatest professional service to the nation.

2. In order to accomplish this purpose, the President, by executive order, has formed the Procurement and Assignment Service. This service was formed primarily for the purpose of gathering and making available information with respect to the supply of qualified practitioners in the fields of medicine, dentistry and veterinary medicine, with a view of securing the most effective allocation of medical manpower as indicated by the requirements of the armed forces, civilian needs and industrial medicine.

3. To work with the headquarters of the Procurement and Assignment Service there has been appointed for each state and the District of Columbia a state chairman for medical doctors, a state chairman for dentists and a state

chairman for doctors of veterinary medicine. These state chairmen will secure information concerning their respective professions and will give advice regarding the allocation of medical manpower.

4. When considering the classification of any registrant who is a qualified medical doctor, dentist or doctor of veterinary medicine, the director of Selective Service desires that local boards, through the state director, shall consult with the respective state chairman of the Procurement and Assignment Service.

5. In considering the classification of a registrant who is a qualified medical doctor, dentist or doctor of veterinary medicine, the local board may, if it finds such registrant should not be deferred for reasons other than dependency, take into consideration the pay and allowances which such registrant would receive in the event he is commissioned in the armed forces. In practically all instances the pay and allowances of such registrant, if he was commissioned as an officer, would be sufficient to eliminate the question of dependency.

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COMMISSIONS FOR MEDICAL STUDENTS

1. The War Department on May 8 granted authority to corps area commanders to waive the provisions of paragraph 5, AR 140-33 and paragraph 7*b*, AR 605-10, for the appointment as second lieutenant, Army of the United States (Medical Administrative Corps), of physically qualified male citizens of the United States above the age of 18 years who are bona fide accepted matriculants at approved medical schools within or without the United States. Officers so appointed will not be ordered to active duty until eligible for appointment as first lieutenant, Army of the United States (Medical Corps).

2. *a.* Appointment will be made without reference to an examining board as prescribed in paragraph 20 *c*, AR 140-5, and without reference to procurement objectives.

b. Appointment will be made without a report of physical examination (WD AGO Form No. 63). Authority is granted to waive the provisions of Section VI, AR 605-10.

c. Application and accompanying papers as prescribed in AR 605-10 (except report required by paragraph 10*a* (2) (*b*), as amended, will be forwarded by the dean of the medical school to the commanding general of the corps area in which the school is located, together with a certified statement that the applicant is a bona fide accepted matriculant in medicine at the institution.

d. Students attending schools outside the limits of the United States will be charged with the responsibility of proper notification to the deans of the respective schools in order that the applications and accompanying papers as prescribed in paragraph 2 *c* (above) are forwarded to the commanding general of the corps area of permanent residence of the student.

e. Officers appointed under the provisions of this letter will be discharged for the convenience of the government under the following circumstances:

(1) Discontinuance of medical education.

(2) Matriculation at an unapproved school of medicine.

(3) Failure to complete successfully the prescribed full course of medical instruction.

(4) Failure to secure appointment in the Army of the United States (Medical Corps) within one year after completion of the prescribed full course of medical instruction.

f. The Surgeon General will maintain adequate records to assure timely application for appointment as first lieutenant, Army of the United States (Medical Corps), and to assure that individuals are promptly reported to the Adjutant General for discharge as provided above.

3. Properly certified applicants for and qualified students at approved schools of medicine, dentistry or veterinary medicine who already hold Reserve commissions in other arms or services will not be ordered to active duty until they:

a. Come within the provisions of 2 *e* (1), (2), (3), or (4) above, or

b. Successfully complete the prescribed full course of medical instruction, in which latter event they may be appointed in the Medical Corps, Army of the United States, in the grade of first lieutenant.

4. Properly qualified students will be invited to submit applications for appointment, final approval in each case to be made by the commanding general of the corps area in which the properly qualified student maintains permanent residence. The commanding general of each corps area is granted the authority to make such appointments.

5. Notice of appointment will be in the following form:

Date

Subject: Temporary Appointment.

To: 2d Lt. John Henry Doe, MA-AUS, A 0-0,000,000
549 North Blank Street, New York, N. Y.

1. By direction of the President you are temporarily appointed and commissioned in the Army of the United States, effective this date, in the grade and section shown in address above. Your serial number is shown after A above. You will not perform active duty under this appointment until expressly ordered to active duty by competent authority.

2. This commission will continue in force during the pleasure of the President of the United States for the time being, and for the duration of the present emergency and six months thereafter unless sooner terminated.

3. There is enclosed herewith a form for oath of office which you are requested to execute and return promptly to the agency from which it was received by you. The execution and return of the required oath of office constitute an acceptance of your appointment. No other evidence of acceptance is required.

4. This letter should be retained by you as evidence of your appointment, as no commissions will be issued during the war.

6. Each appointee will be in the Arm and Service Assignment Group. On each copy of notice of appointment except the original a notation "A. & S. A. G." will be placed in the lower left hand corner.

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10. If an appointment is declined or canceled, the record will be filed at corps area headquarters and no report made to this office or to that of the Surgeon General.

11. Department commanders will, in general conformity with this letter, submit to this office individual recommendations for appointment.

12. The letter from this office of Feb. 11, 1942, AG 210.1 Med-Res. (1-26-42)RB-A, Subject: "Commissions for Medical Students," is rescinded except paragraph 5 thereof.

By Order of the Secretary of War:

J. A. Ulio,
Major General,
The Adjutant General.

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JOINT STATEMENT BY OFFICE OF CIVILIAN DEFENSE AND AMERICAN RED CROSS

To secure unit of effort and avoid duplication of facilities in meeting civilian needs arising from enemy action, this statement is issued by the Office of Civilian Defense and the American National Red Cross for the guidance of defense councils and Red Cross chapters.

It is the responsibility of local defense councils to see that adequate provision is made for all services required in the event of bombing or other enemy attack. During an emergency period the commander of the Citizens' Defense Corps will exercise control over all such services.

With respect to emergency medical services and emergency feeding, housing and clothing, provision should be made in each community in conformity with the following principles:

EMERGENCY MEDICAL SERVICES

During bombing or other enemy attack, all services are directed from the control center in charge of the commander of the Citizens' Defense Corps. Responsibility for the care of those injured as a result of enemy action rests with the Emergency Medical Service of the Citizens' Defense Corps under the direction of the chief of the Emergency Medical Service.

Red Cross chapters assist the Emergency Medical Service by (*a*) recruiting and training volunteer nurses' aides, who will be utilized by the Emergency Medical Service at base and casualty hospitals, casualty stations and first aid posts; (*b*) furnishing lists of persons trained in first aid to be enlisted by the Emergency Medical Service as members of its stretcher teams; (*c*) providing dressings, bandages and supplementary equipment as the chapter may decide in consultation with the chief of Emergency Medical Service; (*d*) equipping and operating emergency ambulances to be assigned to the Emergency Medical Service and to serve under its direction; (*e*) providing supplementary transportation for walking injured and for Emergency Medical Service personnel. During the emergency period, abulances and motor units assigned to such transportation service will be under the direction of the chief of Emergency Medical Service or the transport officer. The Emeregncy Medical Service of the Office of Civilian Defense will not be duplicated by the Red Cross but will be utilized by the Red Cross in natural disasters.

EMERGENCY FEEDING, HOUSING AND CLOTHING

In the joint statment dated April 17, 1942 of the Office of Defense Health and Welfare Services and the American Red Cross it is agreed: "With respect to the emergency period during which special facilities must be made available to meet emergency needs without notice, the Federal Security Administrator will look to the local facilities and resources of the American Red Cross to provide food, clothing and temporary shelter." These services will be provided locally during an emergency period by the Red Cross under the control of the commander of the Citizens' Defense Corps in accordance with detailed plans to be worked out jointly by the commander, the Red Cross chapter and the public welfare authority.

Defense councils should avoid duplication of these facilities. Where an Emergency Food and Housing Corps has already been organized and equipped to the satisfaction of the commander of the Citizens' Defense Corps, its function should be coordinated with the functions of the public welfare authorities and the Red Cross chapter and if possible consolidated.

After the emergency period the appropriate public agencies are expected to undertake the care of civilians in accordance with plans developed in conjunction with the Office of Defense Health and Welfare Services and the Federal Security Administrator. Funds will be made available for this purpose by the federal government through the Federal Security Administrator. Local welfare agencies and Red Cross

chapters should be guided in their relationships by the agreement signed on April 17, 1942 by the Office of Defense Health and Welfare Service and the American Red Cross.

All Red Cross volunteers enlisted in the emergency feeding and housing service, and all other Red Cross volunteers who are to be in service during and following bombing or other enemy action, will register with the local Civilian Defense Volunteer Office. The cards of all such registrants are to be marked so as to show that these volunteers are in Red Cross Service. In order to obtain necessary freedom of movement during and immediately after enemy action, Red Cross personnel certified to the commander by the chapter for emergency feeding, housing and clothing services will be furnished with identification cards issued to Citizens' Defense Corps personnel and will be authorized to wear the official armband.

This statement supersedes the joint statements of Sept. 4 and Dec. 22, 1941.

NORMAN H. DAVIS, Chairman,
American Red Cross.
Approved May 18, 1942.

JAMES M. LANDIS, Director,
Office of Civilian Defense.

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TO THE EDITOR:—

Regulations for the administration of the Blood and Plasma Bank Program of the Medical Division of the United States Office of Civilian Defense have now prescribed, and funds are available for grants to assist approved hospitals in establishing blood and plasma banks. Only hospitals within 300 miles of the Atlantic, Pacific or Gulf coasts are eligible for such grants. After July 1, 1942, these geographical restrictions may be modified, so that grants may be made to inland hopitals. Applications should be addressed to the Chief Medical Officer, United States Office of Civilian Defense, Washington, D. C.

Technical manuals on blood and plasma banks, prepared by the Subcommittee on Blood Substitutes of the Division of Medical Sciences, National Research Council are now available for distribution on request of any hospital to the Chief Medical Officer, Office of Civilian Defense.

The Red Cross has established eighteen donor centers in various parts of the country which are successful in obtaining an adequate supply of blood donors for military purposes. Blood for the production of dried plasma for Civilian Defense purposes will also be obtained from these sources.

Hospitals which establish their own blood and plasma banks with the financial assistance of the Office of Civilian Defense are advised to build up their reserves of blood and plasma by expanding blood collection from relatives and friends of patients who are to receive transfusions. A public campaign for volunteer donors which may compete with the work of the Red Cross should be avoided if possible. If public solicitation is necessary, hospitals should appeal to the local chapters of the American Red Cross for assistance in recruiting hospital donors. Blood donor campaigns by agencies other than the Red Cross will tend to confuse the public and may interfere with the blood collection by the Red Cross for the armed forces.

George Baehr, Chief Medical Officer, Office of Civilian Defense, Washington.

REGULATIONS GOVERNING GRANTS TO HOSPITALS FOR ESTABLISHING RESERVES OF BLOOD PLASMA

WHEREAS: on April 11, 1942, there was allotted from the "Emergency Fund for the President" to the United States Public Health Service the amount of $292,500, "to be expended by said Public Health Service in connection with emergencies affecting the national security and defense for procuring and establishing either independently or, subject to regulations to be promulgated by the Surgeon General, by grants to public and private hospitals located not more than 300 miles from ocean or Gulf Coast, reserves of liquid, frozen or dry blood plasma or serum albumin for the treatment of casualties resulting from enemy action," the following regulations are promulgated to govern the administration of this allotment:

SECTION I. ELIGIBILITY FOR GRANTS

Preference shall be given to hospitals serving communities whose geographical location implies a likelihood of civilian casualties from enemy action, and which are inadequately equipped to handle such casualties.

To be eligible for a grant a public or private hospital located not more than 300 miles from ocean or Gulf Coast* shall:

(1) Have a capacity of not less than 200 beds, exclusive of bassinets, provided that two or more smaller hospitals totaling 200 beds may submit a cooperative project designating one of the participating hospitals as the grantee;

(2) Be on the approved list of the American College of Surgeons and the Hospital Register of the American Medical Association;

(3) Have on the professional staff a physician

Note: the Appropriation Act for the fiscal year 1943 may not limit grants to hospitals within this geographical area.

whose qualifications are the equivalent of those required by the American Board of Pathology for its diplomates.

SECTION II. APPROVAL OF PLANS

A grant shall cover a period of not more than twelve months following the approval of the plan, or not beyond June 30, 1943, and may be used only for the purchase of equipment necessary for the preparation of liquid or frozen plasma, reconditioning or minor alterations of existing quarters, necessary travel and subsistence allowance of $6.00 per diem to cover a training period, if required, of not more than one week, for the physician directing the blood plasma project, and temporary salaries of personnel necessary for the establishment of a blood and plasma project.

The maximum grant for one hospital is $2,000.

A hospital desiring to receive a grant shall submit a plan to the Chief Medical Officer, Office of Civilian Defense, who is authorized to receive such plans on behalf of the Surgeon General of the United States Public Health Service. A plan shall contain the following information:

(1) The number of hospital beds classified according to use;

(2) The name and qualifications of the physician who will direct the plasma project;

(3) Description of present blood and plasma project, if any;

(4) The type and amount of plasma reserves which the institution desires to prepare;

(5) The delivered price of equipment necessary to complete the existing facilities for preparing such plasma — such items to be numbered and described in accordance with the equipment inventory in "A Manual on Citrated Normal Human Blood Plasma," issued by the Office of Civilian Defense, or equivalent approved substitute equipment.

(6) The materials or labor, if any, needed for adapting existing quarters to the needs of the blood plasma project;

(7) The salaries, if any, to be paid additional personnel until the plasma reserve has been prepared. Salary items shall also show the proposed periods of employment for each individual and the proposed monthly rates of pay.

When a plan is recommended by the Chief Medical Officer of the Office of Civilian Defense for the approval of the Surgeon General, the hospital will be furnished a budget and acceptance form to be signed, notarized and returned to the Chief Medical Officer, Office of Civilian Defense.

SECTION III. CONDITIONS OF GRANTS

(1) The hospital shall agree to build up a plasma reserve of at least one unit per bed within three months after delivery of the necessary equipment. A unit of plasma is that amount derived from 500 cc. of citrated whole blood, consisting of about 250 cc. of liquid plasma;

(2) The agreed amount of plasma reserve shall be maintained for use without charge and only for treatment of casualties caused by enemy action. The reserve shall be released for use in other local hospitals for this purpose on order of the local Chief of Emergency Medical Service and for transfer within the state on order of the State Chief of Emergency Medical Service, or transfer from one state to another on the order of the Regional Medical Officer, Office of Civilian Defense;

(3) Liquid plasma shall be kept from being outdated by replacement of older by newer plasma. Replaced units may be utilized for current needs of the hospital in the treatment of its regular patients, provided the plasma reserve shall not be allowed to fall below the stated minimum;

(4) All Plasma shall be prepared in accordance with manuals of the Office of Civilian Defense prepared by the Subcommittee on Blood Substitutes of the National Research Council;

(5) The hospital shall agree to continue the plasma project for its current needs after the expiration of the Federal Grant and to maintain for the duration of the war the minimum stated reserve; thereafter the reserve may be used by the hospital without restriction;

(6) A record shall be kept of all blood donors, including their blood types, to expedite obtaining donors for emergencies;

(7) No funds made available under the grant shall be used for the payment of blood donors;

(8) Any blood plasma project under this program shall be subject to inspection by authorized representatives of the Surgeon General of the Public Health Service.

SECTION IV. METHOD OF PAYMENT

Payments will be made on a reimbursement basis for expenditures made in accordance with the approved budget. Applications for reimbursement shall be notarized and addressed to the Chief Medical Officer, Office of Civilian Defense. The procedure for payment will be as follows:

(1) Payments from the allotment to cover the purchases of non-expendable equipment aggregating $300 or more will be paid upon receipt from the authorized administrative head and accounting officer of the hospital, of an itemized statement of the purchases supported by invoices showing the date of delivery of such equipment.

(2) Payment will be made for the authorized training expenses of the physician who is to direct the blood plasma project whenever the hospital presents a notarized claim itemizing the travel and per diem allowance incident to the training;

(3) Reimbursement for other items of the approved budget will begin only after actual production of blood plasma is started. During the first three months of production, reimbursement will be made on a monthly basis and quarterly thereafter for the duration of the grant. Such reimbursement will be made only upon receipt of a report form prescribed by the

Surgeon General from the institution showing expenditures incurred during the period, total plasma prepared during the month, and the total reserve on hand to date;

(4) Payments may be withheld, and plasma produced as part of this project may be transferred by the Surgeon General, from any hospital which fails to meet the conditions of the grant or to comply with the regulations;

(5) Each hospital shall submit monthly reports during the period of the grant showing the amounts of plasma on hand and used; thereafter, for the duration of the war the hospital shall submit such reports quarterly on its use of the plasma;

(6) Hospitals shall submit promptly reports including clinical abstracts of any untoward experiences encountered in the use of plasma for the duration of the war.

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INTENSIFY DRIVE FOR MORE NURSES FOR WAR DUTY

The national director of the Red Cross Nursing Service, Miss Mary Beard, stated on April 18 that the problem of supplying nurses to meet the constantly increasing demands of the Army and Navy is still a serious one, although seven thousand registered nurses from every section of the country have volunteered since Pearl Harbor for war duty through the Red Cross. This figure represents an all time peak in enrolments and is 50 per cent above the same month a year ago and more than were registered during the entire year of 1940. Nevertheless, a thousand additional trained nurses must be recruited each month this year.

Miss Beard also announced the creation of a student nurse reserve and the assignment of representatives of each of the nine army corps areas to stimulate enrolments further. Senior students in qualified schools of nursing will be given an opportunity to sign up with the Red Cross through the new student nurse reserve, and on completion of their final year and state registration they automatically become members of the reserve and eligible for assignment to the Army and Navy. Representatives in each senior class are being appointed to assist local Red Cross nursing committees to build up the new reserve. The special representatives on enrolment in the nine army corps areas will begin immediately and will assist army nurse corps captains in enrolment routines and in checking the qualifications of nurses volunteering for service with the armed forces.

The formation of many army affiliated medical units requiring from fifty to one hundred and twenty nurses each has increased further the need for nurses, and only Red Cross first reserve nurses are eligible for assignment to these hospital units, which will serve in camps here and abroad. The age limit for nurses in these units has been raised to 45 years, but for other army commissions nurses must be between the ages of 21 and 40.

THE CHICAGO LOYOLA UNIT

U. S. Army General Hospital No. 108 is being organized at Loyola University School of Medicine, Chicago, and will be ready for preliminary training in a short time. The applicants for the fifty-seven medical positions in the unit must be graduates of Loyola, according to Dr. George T. Jordan, Chicago, director of the unit. The one hundred and twenty nurses will be from Mercy Hospital, St. Bernard's Hospital, St. Elizabeth's Hospital and Columbus Hospital in Chicago, St. Francis Hospital in Evanston and St. Anne's Hospital in Oak Park.

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THE ARMY NEEDS BACTERIOLOGISTS, BIOLOGIC CHEMISTS, SANITARY ENGINEERS AND ENTOMOLOGISTS

The Surgeon General's Office has announced that there are vacancies in the Sanitary Corps of the Army for bacteriologists, biologic chemists, sanitary engineers and entomologists. Applicants desiring to apply for commissions in the Sanitary Corps should write to the Office of the Surgeon General and state their college training and civilian experience in detail.

Applicants must have had at least four years' actual experience, and in the case of bacteriologists this must be in medical diagnostic and public health bacteriology; in the case of biologic chemists, in diagnostic and public health biologic chemistry, including blood, urine, food, water and sewage chemistry and toxicology; in the case of sanitary engineers, experience must include at least two of the following activities: mosquito control, rodent control, water supplies and sewage treatment. Applicants also must have completed a four years course in college during which special emphasis was laid on studies in the field in which they desire to be commissioned in the Sanitary Corps. The receipt of a higher degree, Master of Science or Doctor of Philosophy, may be substituted for a part of the four years actual experience required. A professional examination is not required. Additional details concerning the qualifications of applicants for commissions in the Sanitary Corps may be obtained on request to the Surgeon General's Office, U. S. Army, Washington, D. C.

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We may not be our brother's keeper, but we can and do catch his colds and flu (and tuberculosis). Mildred Edie. Survey, Apr. 1942.

Aliens who strike at dawn without warning, killing and maiming our young men, are no more successful in their onslaught than tubercle bacilli that strike youth insidiously at the first flush of adult life. Nor is it any more permissible for those who direct the destinies of college students to be blind and deaf to repeated warnings of the menace that wounds and slays than it would be for a commander to awaken to danger only after the foe had delivered a damaging blow. Charles E. Lyght, M.D. Journal-Lancet, Apr. 1942.

Original Articles

THE INFLUENCE OF WAR ON THE PRACTICE OF MEDICINE

President's Address

CHARLES H. PHIFER
CHICAGO

The future status of medicine is a subject that has engaged the interest of the medical profession more and more during the past ten years. The depression brought in its wake many acute problems with which we have been able to cope with more or less success. Now that we are engaged in a total war, we are confronted with an entirely new set of problems, in addition to those brought about by the economic upheaval of ten years ago.

The depression caused a disintegration of the mode of life of large groups of the population and resulted in many of them becoming dependent upon the Government for support. Federal and State legislation enacted since that time to provide the necessities of life for these people has also affected the medical profession, in that the administration of their medical care has become a part of the all-embracing government program. The fact that this condition has endured for ten years has raised in the minds of many of us a question as to the future status of medicine. This question becomes especially acute now that we are engaged in a total war.

This is a total war not only from th standpoint of the type of warfare, but also in the number of our people who are involved. It is now estimated that we will raise an army of about six or 9 million men, and that there will be about 58 million men and women enrolled to help provide food, ammunition and supplies for the forces in the field. The enrollment of so vast a number of people in one cause, diverting all its energies to one effort, must cast a great influence on the future welfare of the entire nation.

One must consider the future from many angles:

1. The effect of war on medical care of the civilian population.

2. The effect of war on care of the military forces.

3. The effect of war on medical education.

4. The effect of war on the reconstruction period. By this I mean the returning of men in the armed forces, as well as those engaged in the defense program, to civilian life, and all of them finding gainful occupations. In post-war reconstruction one must think of the great number of the population who have been uprooted from their previous environment and occupation because of military service and war effort; these must be returned to civilian life and to the necessity of finding gainful employment in private industry.

5. The number of men in the military forces who will be potential governmental responsibilities.

6. The number of people now engaged in the defense program who, following demobilization, will never again be self-supporting.

In World War One, more than one-quarter of the medical men in the United States were called into service. Little planned thought was

Given at the 102nd Annual Meeting, Springfield, May 20, 1942

given to the medical care of the civilian population. We all remember that the influenza epidemic of 1918 took a large toll of the overworked physicians who had this responsibility.

In this new crisis, careful plans are being made for the provision of essential men for the military forces, the civilian population and essential industry. The practical application of these plans remains to be completed. The fact that selective service now includes all men under the age of 45 will no doubt deplete our younger group of physicians. The present urgent demands for a large medical corps, the majority of whom will be under 37 years of age, will no doubt reduce the number of men available for residencies in the special fields of medical training. It is not unlikely that we will be compelled to abandon this type of training until the war is over. The accelerated teaching program of our medical institutions which has been approved by the Army and Navy will make available about 5000 graduates a year. The fact that many of our younger group of teachers will be called by selective service may deplete our faculties. Therefore, many of the older members of the faculties will be required to resume active teaching schedules. It is to be hoped that we will be able to continue our highly efficient methods of teaching. This remains to be seen. Hospitals must standardize the length of their interneships to one year to conform to the stipulations of selective service regulations. Hospital staffs in general will be compelled to designate the majority of their physicians under the age of 45 as available, the essential group to be found in those above that age. I may say here that it is the intention of the Procurement and Assignment Service, as well as the Surgeon-Generals of the Army and Navy, that physicians serving in the medical corps will be assigned to that field for which their medical training has adapted them.

It is my impression that these radical changes in medical education brought about by the accelerated program should lead to an excellent opportunity for highly qualified and specialized postgraduate teaching after the war.

The care of the civilian population in those areas where physicians have entered military service should be given earnest consideration by the State Medical Preparedness Committees in order that no district will be without adequate medical care. Those physicians who have entered military service have entrusted to those who remain at home, the care of their patients and the safeguarding of their interests. Those who remain must accept this trust.

It is essential that medical men who enter military service undergo a standardized amount of military training. They must become familiar with new technics in the medical care of large numbers of people, often under inadequate and hazardous circumstances.

It has been demonstrated repeatedly that war contributes to the advancement of medicine. Distinct advances have resulted from every war in which we have been engaged during the last century. Following the Civil War with its devastating toll from typhoid fever and other camp diseases, sanitation came into being. A direct result of the Spanish-American War was the conquest of yellow fever. The First World War offered unprecedented opportunities to physicians and surgeons, and as a result of their experiences medical achievements in the past twenty-five years have probably been greater than in any preceding quarter-century.

In the present war, where our soldiers and sailors will traverse every land and sea, many diseases will be encountered not ordinarily found in their native land. Thus there will be more and more opportunities for medical achievement. The massing of great armies drawn from every environment and every part of the land, gives an opportunity for the study of disease conditions seldom found in private practice. The possibility of pandemics and epidemics of contagious diseases must not be forgotten.

There are at this time more than 200 of our medical scientists actively engaged in research work, the results of which will be carefully correlated with the medical work of the Army and Navy.

The First World War taught us the value of teamwork and specialization. The physical examination of men drawn into military service gave valuable information on the physical and mental infirmities of a large number of the population, as well as on the problems concerning their economic status. Many of our medical men acquired a broader experience and proficiency, and the ability to assume greater re-

sponsibilities. Many discovered new and greater fields of endeavor, and changed their environment for one of greater scope following the war.

It is unnecessary to recount in detail the medical achievements discovered or elaborated as a result of medical service in the last war. To mention but a few, we have the improved treatment of war wounds, and improved technic of debridement; the proved value of splinting and immobilizing extensive wounds of the soft tissues; the Carrel-Dakin treatment; the use of newer dyes as disinfectants. Great strides were made in management of fractures and joint surgery, especially in infected joints. The technic and the possibilities of blood transfusions were early recognized. Much was learned of acute and sub-acute infections, and the fact that bacteria may lie dormant in healed wounds with reactivation upon slight trauma.

In the present war we have learned from the experiences of those who cared for casualties at Pearl Harbor, the type of warfare we may expect to encounter today, namely bombing and machine gun attack. We have seen the influence of chemotherapy in the management of wounds. The majority of the injuries were multiple lacerated wounds, compound comminuted fractures and burns, and we have reports of the role sulfanilamide played in their care. Much work is being done in improvement of means of collection and transportation of blood plasma for use in evacuation hospitals.

Throughout the centuries the triple scourge of war has been pestilence, famine and epidemics. The hazards of typhus, plague and deficiency diseases are not yet conquered. The massing of recruits from various localities increases prevalence of all the epidemic diseases. In spite of all our advances in knowledge of cause and prevention of disease, epidemics will prevail. Influenza, cerebrospinal fever, pneumonia, dysentery, typhus and malaria, each took a toll in the World War. Malaria still continues to be a serious problem. The recent reports regarding the value of large doses of Vitamins K and C in wound healing will no doubt contribute greatly to the end results in many war injuries.

The migration of thousands of defense workers to new areas presents additional medical-social problems. In many parts of the country physicians have had to be transported to these areas to render medical care. In many places sanitation was utterly inadequate or entirely lacking.

It is also to be noted that there is a great increase in industrial accidents in war time, probably due to the many inexperienced workers in defense plants. Night work is necessary, therefore health standards are reduced. Occupational diseases are bound to increase. The class from which the laborer is usually drawn is one frequently susceptible to tuberculosis. In this class, also, vitamin deficiencies in a subclinical state are most frequently demonstrated.

In the question of post-war reconstruction, thought must be given to the fact that many changes were essential to meet the demands of our war effort. Conversion was the greatest single problem that American industrial ingenuity had ever been called upon to face. This great defense program necessitated the shifting of hundreds of thousands of our population into new areas. To readjust this multitude to normal life, it is only fair to assume that when the war is over, the majority of industries transferred into defense work will be compelled to revamp their activities and start anew from scratch.

The American people have no doubt that we shall win this war, no matter how long it takes or what it costs. The majority of people are, however, very pessimistic about the post-war future. A recent poll of public opinion reports that 70 per cent of people believe that after the war we shall all have to work harder; 60 per cent believe pay will be lowered; 43 per cent believe that prices will be higher, and 61 per cent believe that there will be a great deal of unemployment. They believe that even when victory is obtained we will all have to endure a drastic lowering of our standards of living, and that there will be unemployment on a very extensive scale. Many of the unemployed will become the responsibility of relief agencies. The vast majority of them live under unsanitary housing conditions. The overtaxing of sanitary facilities in many communities will present medical problems as great as or greater than those during the depression.

The cause of unemployment during recent years was the collapse of industry. What then

will be the condition of our country with reference to employment after the war? Can private enterprise furnish a job for everyone who wishes to work and is physically fit to work? It is a matter of general opinion that if unemployment is to be averted, the Federal Government will need to develop some comprehensive program, flexible enough to help devise and finance methods to include all types of unemployment. It is logical to surmise that in view of the present national indebtedness these projects on a gigantic scale will be impossible.

The big question then in the post-war future will be the demobilization of the armies and the changing of industries from defense to peace time projects. What then will become of the millions of people who have disassociated themselves from their previous environments to that of defense projects? Unless they are returned to industry many of them again will return to State and Federal dependency.

The fact must not be overlooked that following demobilization of military and industrial armies there is always a period of restlessness and a trend toward political, social and economic wreckage.

It should not be forgotten that it is fundamental in our form of government that the crisis of war provides a government with extraordinary powers. When the sovereignty of the government is threatened, that government, even though democratic, must waive or declare a moratorium on the rights of individuals or groups of individuals, which if exercised would endanger the sovereign state itself.

The problem of the future medical care of the millions of men who will be demobilized from the fighting forces is a major question. The majority of you remember the great controversies following the last war, on the question of limiting government hospital facilities to service-connected cases. There is at this time much agitation on the question of immediately increasing the building program of Veterans Administration facilities to accommodate the veterans of this war on the same basis as heretofore, namely, service connected and non-service connected disabilities. I would like to call your attention briefly to some facts:

During the past 22 years there has been made available a total sum of $208,703,029 for construction of facilities for veterans. In June, 1941, there were 61,849 hospital beds under control of Veterans Administration. Funds have been definitely obligated and allocated for new construction to provide for 1479 additional beds in veterans hospitals in 1942 and 1943. In 1941 there were in 91 veterans hospitals a total of 51,911 world war veterans, receiving treatment. Of this number, 77 per cent were being treated for non-service disabilities. The question then arises concerning future hospital care for service men participating in the present war. Careful consideration should be given to what the future effect will be on the practice of medicine, if the same procedure is followed in extending medical care for non-service connected disabilities, to our present and future military forces of from 6 to 9 million men.

There is a changing attitude of the public toward the government, in that many citizens are willing to accept paternalism, to depend upon the government for aid and allow it to regulate their daily affairs. This is borne out by the statement of the late Calvin Coolidge: "There are always those who are willing to surrender local self-government and turn over their affairs to national authority in exchange for payment of money out of the federal treasury. Whenever they feel that conditions in their environment need correction, instead of endeavoring to apply a remedy themselves they seek to have a tribunal sent from Washington to take over their duties, heedless of the fact that in accepting such supervision they are bartering away their individuality of action. Such moves are always made on the assumption that they are a public benefit."

It is thus evident that in future years the burden of direct relief probably will become greater and greater. While the armament boom has caused some reduction in relief rolls, later on they will undoubtedly have to take on the greatest burden in their history.

It is an historical fact that in every country on the globe there has been a tendency toward socialization subsequent to war. The gigantic post-war turmoil that will follow this international catastrophe undoubtedly will increase the possibility of drastic social changes in America. One need only review the events of the past

few years to understand that many new limbs are being grafted onto our social structure, not a few of which are patterned after those of European countries. The passing of the Social Security Act evidences this trend. As orginally drafted, its beneficiary categories were definitely limited. What influence the war will have on its scope remains to be seen. However, it is significant that the most recent proposals for amendments to the Social Security Act recommend: "An increase in the coverage of old age and survivors' insurance, addition of permanent and temporary disability payments and hospitalization payments beyond the present benefit programs, and liberalization and expansion of unemployment compensation in a uniform national system."

We all know that in this country there has been a growing trend toward socialization of medicine during recent years, its proponents urging that it be brought about as a means of distributing medical care to all the under-privileged. There are at this time a number of bills awaiting action before Congress, proposing to extend the federal old age and survivors' insurance benefits of the Social Security Act to employees of religious, charitable, scientific, literary or educational organizations, and to certain other groups of employees now exempt, such as domestic help and farm employees; to provide financial assistance or other assistance, *including medical and dental aid,* to needy transients, etc. In view of the above, it is logical to expect that in the post-war period many of the problems of the medical profession will be intensified.

In summary, the influences of this war on the future practice of medicine may be grouped under the following headings:

Medical: The medical profession will have an unparalleled opportunity for the practical application of research in diseases not ordinarily encountered in civilian practice, and in trauma of war. Problems in sanitation will be met and solved. There will be a vast field for the study of nutritional diseases. The newer methods for treatment of shock will be called into play. The preparation and storage of blood plasma, and its practical use under conditions of stress, will become routine practice. Because the war has limited the supply of many essential drugs, our needs will stimulate research workers to seek substitutes, which may well prove to be even more efficacious than the originals. There will be a vast opportunity for the practical application of Vitamins K and C in wound healing. It is estimated that their use will help shorten the period of disability, and thus permit the return of patients to normal activity at a much earlier time following operation or trauma. This is a factor of paramount importance in war, when man power is so essential. In civilian life it will tend to shorten hospitalization and time lost by reason of disability. This, in turn will reduce the cost of medical care, a factor which has always been a matter of concern to the medical profession, as well as to industry and employees.

On the other hand, the medical profession faces the probability that there will be little training in the various specialized branches of medicine during the war, because the urgent demand for medical men in the military forces will not permit time for special training. Further, there is a strong possibility that the flow of doctors may be checked because of the great need for man power, which will reduce the number of available students for medical training.

Prior to the last few years European post-graduate teaching attracted men from all over the world. At one time the advantages for study offered in these famous clinics excelled those to be found elsewhere. More recently, however, American physicians have felt that the opportunities for post-graduate study in this country equalled or, in fact, surpassed, those of Europe. Deterioration of European clinics began with World War One. Further disintegration may well ensue following this war, in addition to an entire loss of popularity. This should point the way to careful planning by our leading teachers and clinicians for post-graduate work of the highest caliber. The changes in medical education brought about by the program of accelerated teaching, which I have enumerated, and the probable discontinuance of residential training, will cause a number of physicians in the post-war period to take advantage of whatever facilities are then available to improve their training in certain fields. Many medical officers, as a result of their mil-

itary experiences, will be stimulated to enlarge the scope of their abilities. Thus there will be a golden opportunity for America to become the greatest center for post-graduate teaching that the world has ever known.

Economic: We must not overlook the probability of extension of all future medical and hospital care to veterans of this war, in millions of cases of non-service as well as service connected disabilities.

Social: The medical profession also faces an acute problem in the possibility of a great increase in relief rolls, by reason of unemployment during post-war readjustment; as well as an increase in the number of people who will come under the benefits of the Social Security programs.

It is thus obvious that this war will exert a great influence on the future of medicine. I believe that the private practice of medicine will continue, and that socialized medicine on a national scale will not prevail. There will, however, be many acute post-war problems by reason of extension of Social Security benefits and possible further extension of governmental care to veterans; and because of the return to dependency of many of those now engaged in the defense program.

At this time all our thought, all our energy and all our effort is directed to winning the war. With victory, however, the medical profession must face these problems and, through its state and national organizations should play an important role in leading and directing programs for medical care, and should see to it that in any legislation which has to do with medical care, the interests of the medical profession are fully protected.

Medicine is on a very good standard in the United States, when you realize that there is one doctor to 767 people, as compared to one doctor to 1,061 in England, and that really runs up to one doctor to 3,500 when you get to Czechoslovakia, and one doctor to 3,000 when you get even to such a well-organized though small country as Sweden. It is interesting to know that there were in 1927, 853,318 hospital beds; that in 1939 there were in this country 1,191,000 beds. —*Frank H. Lahey, M.D., Boston, in the Connecticut State Medical Journal.*

THE TREATMENT OF THYROTOXICOSIS

Warren H. Cole, M. D.
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The diagnosis of thyrotoxicosis is readily made in patients who have a relatively severe degree of hyperthyroidism. However, difficulty will be encountered in differentiating mild hyperthyroidism from numerous other diseases. A discussion on treatment of toxic goiter is, therefore, incomplete without emphasis on an accurate diagnosis. A disease which most completely simulates hyperthyroidism is neurocirculatory asthenia. In patients afflicted with this disease, nervousness, tremor, loss of weight, profuse sweating, tachycardia, sleeplessness, etc., are identical to that seen in toxic goiter. The differentiation can occasionally be made only on absence of enlargement of the thyroid. It must be remembered, however, that in about ten per cent of patients with toxic goiter the thyroid gland is not enlarged. Naturally, patients with neurocirculatory asthenia will not have exophthalmos or other eye signs. In general, it is a good rule to delay operative treatment in all these questionable cases until diagnosis of thyroid toxicity is proved. An ideal procedure in doubtful cases is to place the patient on Iodine therapy. With very few exceptions the patient with toxic goiter will be benefited and the patient with neurocirculatory asthenia will not. There are numerous other diseases, including pulmonary tuberculosis, leukemia, etc., which simulate hyperthyroidism.

PREOPERATIVE TREATMENT. — Of the various phases in the care of patients with toxic goiter, preoperative treatment is by far the most important, particularly if we include judgment as to time of operation in with preoperative consideration. It is universally agreed that toxic goiter is best treated by operation rather than by medical treatment, including x-ray therapy. Part of the reason for the almost universal agreement is dependent upon the sharp reduction in mortality rate during the past ten years, to a figure below one per cent in most clinics.

Administration of Iodine. — With very few exceptions, the administration of iodine (Lugol's solution) should be considered only as an agent

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in the preoperative preparation of the patient, and should not be used in routine therapy. Exceptions to this statement would, of course, be admitted to patients who refused operation. The doses of Lugol's solution is 5-10 minims three times a day. The author is of the opinion that larger doses are not more effective than this dose. Although in the average case of thyrotoxicosis the maximum benefit would be achieved near the twelfth to fourteenth day, yet there are many instances when the maximum benefit will not be achieved within three weeks or longer. It should, therefore, be emphasized that if the patient is not ready for operation after two weeks of iodine treatment, operation can be postponed until physical condition permits operation, even though many weeks may be consumed in this preoperative therapy and observation. Although patients do become iodine fast, this condition has been exaggerated and is not as dangerous as operating on a patient who is not yet operable.

Increased Caloric Intake. — One of the most common errors made in the treatment of toxic goiter is failure to appreciate fully the necessity of markedly increasing the food intake. As will be discussed later, a gain in weight is a very important prerequisite for operation. In the severely toxic patients, this gain in weight can be achieved only by a marked increase in the diet. The dietary intake in severely toxic patients will have to be increased to five thousand or six thousand calories per day. It is not sufficient to tell the patient to "eat a lot," since he thinks that the addition of a glass of milk two or three times between average sized meals constitutes a "lot." If patients are severely toxic, they should be hospitalized for this preoperative treatment, in which case the food may be administered accurately from the quantitative standpoint.

Sedation. — All patients with more than a trivial degree of hyperthyroidism will complain of sleeplessness. It is just as important (in fact, more important) that patients with toxic goiter obtain a full quota of sleep as any other individual. The administration of a mild sedative every day, such as phenobarbital in a dose of ½ gr. two or three times daily is strongly indicated. Morphine and codeine should not be given during this pre-operative preparation unless a crisis develops.

Control of Physical Activity. — Since patients with hyperthyroidism are burning up much more energy than the average individual, it is important that their physical activity be restricted. Naturally, patients with more than a mild toxicity should cease work. It should be emphasized that since restlessness and nervousness are constant symptoms of hyperthyroidism, these patients do poorly unless they have something to do. They should, therefore, be encouraged to occupy themselves with slight duties or pastimes which do not result in the expenditure of a significant amount of energy. They should be encouraged to take a nap for two or three hours each afternoon, or at least to lie down for complete rest. Patients with severe toxicity must be subjected to complete bed rest. The same may be said of patients with cardiac decompensation. The author is firmly convinced, however, that a patient with toxicity of a mild degree should not be subjected to bed rest since bed rest is apt to result in atrophy of muscle, bone, and so forth.

Elimination of Worry and Psychic Trauma. — Since patients with hyperthyroidism tend to be apprehensive, and worry about trivialities, it is essential that they be divorced from family troubles and other worries. For example, the mother should be separated from sick or unruly children, and should not be exposed to financial or family troubles unless absolutely necessary. Hospitalization will usually be sufficient to take care of this precaution. It is the duty of the physician to be sure that members of the family are not exciting the patient by unwise "loose" conversation.

PREREQUISITES FOR OPERATION. — Our inability to teach students just when a patient with severe hyperthyroidism was ready for operation drove us to an attempt to set up a group of prerequisites on as much of a mathematical basis as possible. Since adopting these prerequisites, we have not had a single fatality in our patients with hyperthyroidism.

Gain in Weight. — Of the several prerequisites to be mentioned, a gain of weight is perhaps the most important. In fact, I should like to make

the dogmatic statement that no patient with severe toxicity should be operated on without a gain in weight. Rarely indeed will it be impossible to produce a gain in weight if the caloric intake is pushed up to five thousand or six thousand calories per day. The average individual cannot begin to eat this quantity of food. However, since an increased appetite is one of the important manifestations of toxic goiter, rarely will it be difficult to have this type of patient eat the proper amount of food. About the only circumstances under which these patients will not eat their quota of five or six thousand calories is when they are nauseated by over medication or are approaching a crisis. The treatment in the presence of crisis is, of course, difficult, and will be discussed later.

The Resting Pulse should be Below 110. — Although the pulse with a toxic goiter varies considerably from hour to hour, it usually varies only with the stimulus of excitement and activity. It will, therefore, not be difficult to determine the resting pulse rate. We urge that the resting pulse rate should be under 110 if post-operative trouble is to be avoided. It is well known that the pulse rate of patients with toxic goiter have a very labile course insofar as a minor degree of excitement or physical activity will increase it sharply. If only slight activity produces a rise from 108 to 140, it is to be assumed that such patients are more toxic than appearances suggest. The author is of the opinion that the pulse rate is a very accurate index of the patient's toxicity. However, complicating factors such as cardiac lesions, physical strain, etc., must be borne in mind when using the pulse rate as an index of toxicity.

Administration of Iodine. — The patient with a significant degree of toxicity should be kept on Iodine therapy for at least two weeks before operation. Adherence to this rule will improve the mortality rate.

Basal Metabolic Rate below 50. — Although the author is fully aware of the fact that the basal metabolic rate is very frequently misleading, he is just as firmly convinced that in the vast majority of patients it is of definite assistance in determining the degree of toxicity. In general, patients with a basal metabolic rate over 50 at the time of operation will have a stormy post-operative course.

Improvement in Symptoms. — For two reasons it is important that there be an improvement in symptoms: (1) to verify the diagnosis and (2) to verify improvement in operability. In reality, improvement in symptoms is dependent upon the response to Iodine and the response to the other phases in pre-operative treatment.

By the use of the above prerequisites we are firmly convinced that we can increase the accuracy of the approximation of operability. We consider that patients who do not fall under the prerequisites just mentioned are poor operative risks and should not be subjected to a bilateral thyroidectomy. We realize that there are a few very capable surgeons doing goiter surgery who do not believe that division of the operation into two stages lessens the chance of fatality in the severely toxic patients. However, the author agrees with Lahey[1] and others who advise two-stage operation in patients whose operability is doubtful. If treatment for a few additional weeks beyond the usual time of expected maximum Iodine effect still is unsuccessful in having the patient fulfill the prerequisites mentioned, we resort to the removal of only one lobe. The second lobe is removed four to six weeks later (never under three weeks).

The patient's strength is a fairly good index of operability. Some surgeons go so far as to say that if a patient can walk as far as a block without excessive fatigue, he is operable. Although the author has never been able to establish any level of physical accomplishment as in itself being a prerequisite, he is, nevertheless, fully conscious of the fact that patients who are unable to walk several times about the room are poor operative risks and should not be operated on. In general, patients who can walk a block or two without having to stop for rest because of weakness, etc., will be operable.

ANESTHESIA. — The author prefers ethylene as the anesthetic of choice for thyroidectomy in patients with toxic goiter. It is important that proper premedication be given. A dose of 1.5 grs. of phenobarbital should be given the night before operation. Premedication consisting of morphine, gr. ¼ and scopolamine, gr. 1/150, should be given 60-90 minutes before operation. If toxicity is severe, the dose of mor-

phine may be increased. If a sedative such as phenobarbital is given early in the morning, the dose of morphine must be reduced.

The author agrees with Lahey and others that local anesthesia is not particularly desirable since it does not obliterate consciousness. Since patients with marked toxicity are naturally very apprehensive, they would surely tend to worry and fret during the excitement of operation unless premedication was ideal. The author is not convinced that the dose of premedication can be so effective as to obliterate this apprehension.

Nitrous oxide may be given by experts, but the amount of oxygen permissible is so small that anoxia may be present. Cyclopropane is a much more desirable agent since a relatively large amount of oxygen can be given with the gas, thereby eliminating anoxia. The chief difficulty with cyclopropane is that it produces a bradycardia and sometimes cardiac irregularity. The bradycardia interferes with the operators interpretation of the patient's operability.

Only rarely indeed is ether advisable as the anesthetic agent. Nevertheless, anesthetists should be well qualified and willing and able to change from one agent to another in case the anesthetic appears to be going poorly.

It is true that with general anesthesia there is apt to be more laryngeal spasm than with a local anesthetic. However, this spasm frequently can be controlled by a shift in the procedures of giving the anesthetic. If the spasm becomes stubborn, it may be necessary to pass an intratracheal tube. I wish to emphasize that patients with severe toxicity tolerate anoxia very poorly. If they should develop laryngeal spasm or any other obstruction of respiration, it must be corrected within a few minutes. If it is not corrected it will reflect in the patient's operability as will be noted by a sharp rise in pulse rate. Anesthetists should, therefore, be prepared to insert an intratracheal tube if stubborn laryngeal spasm develops.

PRECAUTIONS IN OPERATIVE TECHNIQUE. — Some of the more important precautions in operative technique consist of avoidance of injury to the recurrent laryngeal nerve, rapid control of hemorrhage, preservation of parathyroids, etc. By preserving the posterior capsule of each lobe, at least one or two parathyroids will practically always be preserved and the danger of injury to the recurrent nerve will be minimized. The author does not isolate the recurrent laryngeal nerve routinely, but recommends it in patients with recurrent hyperthyroidism and in patients who have numerous nodules extending backward and to the midline. In difficult cases the surgeon should move to the other side of the table when the second lobe is removed. Usually it will be necessary to cut the ribbon muscles transversely, but the surgeon should not hesitate to do so if exposure is poor. The important arterial trunks such as the superior and inferior thyroid vessels should be doubly ligated. The author prefers to use cotton rather than catgut to elminate the exudation of fluid which is apt to occur when catgut is used. I wish to emphasize that in general, carefulness during the operation should take precedence over speed. Careless rapid thyroidectomies will be associated with a high incidence of nerve injury, tetany, and post-operative hemorrhage. It should be emphasized, however, that when the patient's operability is doubtful, speed is very essential.

POST-OPERATIVE TREATMENT. — Many lives are saved by skillful and intelligent post-operative care. When the patient is put to bed after operation, the bandages should be inspected lest they be too tight. It must also be ascertained that the airway is open so that proper respiratory exchange can be secured. Lifting the backrest two or three inches will add to the patient's comfort and facilitate breathing and swallowing.

It is exceedingly important that patients with a severe degree of toxicity receive at least three thousand cubic centimeters of fluid the day of operation. It is our policy to give three thousand to an adult of average size irrespective of the amount he will take by mouth. He is allowed to drink water immediately after operation, but the quantity is usually so small as not to influence the amount given intravenously. The solution of choice is five per cent glucose. About one thousand cubic centimeters of this may contain saline. The amount of fluid given intravenously after the first day is dependent entirely upon the amount taken by mouth. I like to emphasize, however, that it is the surgeon's responsibility to see that the patient receives at

least three thousand cubic centimeters per day. The type of fluid given orally depends entirely upon the patient's likes and dislikes. It is usually unwise to give fluids to patients which they are not accustomed to drinking.

If the patient is quite toxic or if the pulse rate is relatively high, oxygen should be given. Placing the patient in an oxygen tent usually creates apprehension and fear, so, with few exceptions, we, therefore, resort to the administration through a tube inserted in the nasal pharynx through the nose.

The patient must be watched closely during the first twelve hours following thyroidectomy lest such complications as hemorrhage into the wound, respiratory obstruction, etc., develop. I wish to emphasize that a post-operative hemorrhage very rapidly fills up the neck so completely as to entirely suppress respiration. The neck should be opened immediately, using as good asepsis as possible, the clot evacuated, and the offending vessel secured. On many occasions, one of the first manifestations of post-operative hemorrhage will be difficulty in respiration. At first this is manifested by restlessness on the part of the patient who cannot find a comfortable position. Respiration will soon become noisy, associated with a stridor, followed soon by cyanosis. In general, delay in treatment of respiratory obstruction to the point where marked cyanosis develops, is inexcusable and dangerous. If hemorrhage is the cause of the obstruction, the neck will have to be opened. If it is due to injury of the recurrent laryngeal nerve, tracheotomy may be necessary. In either case, oxygen should be administered while the surgeon is making up his mind as to the necessity of radical treatment. Unfortunately, it is true that patients who develop significant respiratory stridor associated with cyanosis due to "nerve injury" within two or three hours following operation usually will require tracheotomy.

In our clinic, we routinely give 5cc of Lugol's solution by rectum in two hundred or three hundred cubic centimeters of water. Next day the patient is placed on ten minims of Lugol's solution three times a day. This therapy is maintained for two or three weeks until the symptoms of hyperthyroidism have disappeared.

Ample sedation is important in post-operative care. Heavy doses of morphine should be given to toxic patients who are restless. I wish to emphasize the necessity of sleep in such patients. In addition to morphine, phenobarbital, gr. 1/2 or more, may be given twice a day. However, morphine must not be given to the point of depressing respiration lest anoxia develop; particularly is this true if a barbiturate compound is being given.

Severely toxic patients require very few covers after operation. The average nurse is accustomed to placing one or two blankets on post-operative patients, and does not realize that post-operative thyroid patients do not require much cover. In warm weather it may be necessary to use ice bags, electric fans, etc.

TREATMENT OF CRISIS. — The incidence of crisis is much greater in summer than in winter because of the heat. Generally speaking, if the crisis develops post-operatively, it can usually be said that an error was made in the time of operation or in the extent of operation. Regardless of whether the crisis occurs post-operatively or pre-operatively, the treatment is about the same. If it develops in warm weather, the patient should be placed in an air-conditioned room. If he is sweating profusely, thereby making it necessary to give at least four thousand cubic centimeters of glucose in a twenty-four hour period, it is possible that glucose may be substituted in part by amino acids as popularized by Elman.[2] If the patient's temperature is elevated or is beginning to rise, ice bags and wet towels should be placed at various places on the body. If the temperature is higher than 102 or 103 degrees, an electric fan may be turned on him. The danger of "catching cold or pneumonia" is far less than the danger associated with crisis. Sodium iodide should be given intravenously in doses up to one gram once or twice a day. To obtain a higher caloric intake, it may be advisable to use ten per cent glucose instead of five and give it slowly. Oral intake may be resorted to, but usually is ineffective, since patients with crisis usually vomit. Sedatives are important; morphine and phenobarbital may be given together as indicated. It is exceedingly important that they not be given to the point of producing respiratory depression and anoxia. Administration of oxygen is likewise very important.

COMMENT

To a great extent the mortality rate is determined by the judgment and care exercised by the surgeon in choosing the time and extent of operation. The author agrees with Lockwood[3] who states that "There is scarcely any field of surgery in which the mortality reflects so truly the surgical judgment of the surgeon as goiter surgery. The operative skill and dexterity of the surgeon, while very important, bears comparatively little relation to the mortality." Although it is impossible to obtain a mortality rate of zero because of death from natural cause during the hospital stay, attempt should naturally be made to approach this figure as much as possible. In general, a mortality rate of greater than one per cent implies that there is a source of error somewhere in the phases of therapy and judgment as to operability.

Of six fatalities which we have encountered in a six year period (1936-1942), we discovered that one-half of these should have been preventable.

TABLE NO. 1
TYPES OF GOITER AND MORTALITY
(1936-1942)

Type	Operations	Deaths	Mortality	
Tox. Diffuse	348	3	0.86%	1.01%
Tox. Nodular	244	3	1.23%	
Non-Tox. Nod.	155	0	0%	
Total:	747	6	0.80%	

As shown in our above table, our mortality rate during the past six years is 0.8 per cent for toxic and non-toxic goiter excluding carcinoma. For the toxic group (see table 1) the mortality has been 1.01 per cent. As stated previously, we have not lost any patients since adopting the prerequisites for operation as described. We fully realize that each surgeon probably has his own method of determining operability and has definite prerequisites of his own. Regardless of the technique of operation used or the types of precautions adopted, we are all striving toward the same end, namely, maintenance of the lowest possible mortality rate with a maximum amount of benefit to the patient.

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CURRENT EXPERIENCES WITH E. HISTOLYTICA INFECTION IN CHICAGO

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Introduction: A number of studies of the incidence of infections with Endamoeba histolytica have been conducted in various parts of the country. The results obtained have been well tabulated by Craig and Faust.[1] On the basis of these surveys, they find an average incidence of 5% to 10%. However, the figures vary widely for different localities and for different groups in the same locality. The most complete survey for the Chicago area was made by Spector[2] during the post-epidemic period from 1933 to 1937. Among 4,478 normal persons representing various groups in the community, she obtained 205 or 4.6% positives and among 5,630 patients of the University of Chicago Clinics and the Lying-In Hospital she obtained 150 or 2.6% positives for the large cyst variety of E. histolytica. A much higher percentage of positives was obtained for the small cyst race which became very prevalent after the Chicago epidemic of the summer of 1933 and then gradually declined and disappeared. The incidence of amebiasis throughout the state of Illinois is not known, but it may be assumed to approximate that of the Chicago area.

Methods of Study: The present study comprises 2,691 persons examined during the period from May, 1938, to December, 1941. The individuals examined may be divided into two groups, the one consisting of 2,024 patients of the University of Chicago Clinics, and the other of 667 food handlers. In the great majority of instances, stool examination was carried out in the patients because of the presence of gastrointestinal symptoms. Examination of all food handlers, however, was routinely conducted and this group may, therefore, be considered more representative of the general local population. In most instances only one stool was submitted for examination. In 35% of the patients, however, two or more specimens were obtained per

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patient. Although provision is made for the re-examination of each food handler at intervals of six months, the heavy employment turnover reduced the number receiving two or more examinations to only 27% of the entire group.

Laboratory Diagnosis of Amebiasis: Detailed methods for the examination of feces for amebae are given in many textbooks and need no repetition here. In this study microscopic examinations were made of direct smears. During the first part of the study direct smears were supplemented by routine culture and hematoxylin stained smears, but as these techniques were quite time-consuming and in no instance increased the positive findings, they were discontinued as a routine and employed only as confirmatory tests. Culture alone cannot be depended upon because an occasional strain will fail to develop in culture. Six of the fifty strains reported here failed to develop in the excellent Cleveland and Collier medium. Concentration methods, especially the zinc sulphate flotation technique of Faust and coworkers[3] were employed only when large numbers of cysts were desired for class or experimental purposes. Such concentration methods are too laborious to be practical for routine use in the small laboratory. In our experience repeated careful microscopic examination of fecal smears suspended in salt and iodine solutions gives eminently satisfactory results.

Emphasis may be placed on the fact that stools containing barium, bismuth, oil, alkaline salts for ulcer management, etc., are not satisfactory for parasitic examination. As constipation is a common symptom in the carrier and as the practice of taking mineral oil is fairly widespread, clinicians should give attention to this possibility and should see that the oil is stopped several days prior to the collection of specimens for examination. Such a procedure will save both patient and parasitologist time and trouble. Saline purgatives may be given in obstinate constipation or where rapidity of diagnosis is required; otherwise, repeated examination of stools normally passed suffices.

The laboratory diagnosis of amebiasis is unfortunately not a simple matter. It requires adequate training and considerable experience. Since the majority of physicians must depend on laboratory or hospital technicians, every effort should be made to see that these persons are properly trained. In any case, the physician should assure himself that stool examination was performed by a qualified individual before placing complete reliance in the report. The physician in turn can assist the laboratory by giving proper instructions to the patient as to the collection of specimens.

Results: Infection with E. histolytica was detected in 50 or 1.8% of the total number of persons examined. Thirty-five infections or 1.7% occurred among the patients and 15 or 2.4% among the food handlers. If those food handlers examined previously are eliminated, the incidence among the new employees rises to 2.9%.

The value of submitting more than one stool for examination has been emphasized by many workers. Dobell found only one-third positives on first examination. In our series 43 or 86% were found positive on first examination, five on the second, one on the third, and one on the fifth. Furthermore, several patients in whom the first fecal specimen was positive showed one or more completely negative stools on subsequent pretherapeutic examinations. In such instances the stools were given exceptionally thorough examination. A diagnosis should not be accepted as negative in suspicious cases until at least six stool examinations have revealed no parasites, although in a large majority of cases, a single negative examination is sufficient for clinical purposes. Judgment is obviously required to determine when to continue a diligent search for parasites. It is not feasible to attempt every few months a careful examination of six or more stools of all food handlers or of all patients with abdominal distress, to say nothing of the general population! Once a positive diagnosis has been obtained, further pretherapeutic stool examination is, of course, unnecessary.

The value of proctoscopic examination in the diagnosis of amebic dysentery is controversial. From the standpoint of laboratory diagnosis we have found swabs taken directly from the typical lesions observed at proctoscopy to provide the best and quickest means of identification. In one of our patients showing typical ulceration of the rectum all stools were negative except one in which amebae were found not in the fecal mass itself but in the blobs of mucus accompanying it. Swabs obtained at proctoscopy on the other hand, were consistently positive. Dr. Kaplan-

Spector considered the blobs of mucus in the stool, particularly those tinged with blood, and swabs obtained from rectal lesions at proctoscopy to be the best material for the demonstration of amebae. Manson-Bahr[4] records 26 cases in which the "diagnosis was rendered certain from scrapings made from amebic ulcers of the bowel, whereas no fonfirmatory evidence had been forthcoming by simultaneous feces examination." Craig,[5] however, states that he has "never found it necessary to resort to this method in order to demonstrate the presence of the organisms."

The majority of persons harboring Endamoeba histolytica were males, 31 or 62%, as is in accordance with the known predisposition of the disease. The incidence in females was only 38% although the number of females examined, both as patients and as food handlers, was slightly greater constituting 55% of the total.

Among the 35 positive patients, 25 showed cysts or precystic forms or both and 10 showed trophozoites. Among the 15 positive food handlers 14 yielded cysts or precystic forms or both and only one showed trophozoites. Twenty-three of the 50 persons infected with E. histolytica also harbored one or more other parasites. In most instances these were non-pathogenic amebae or flagellates; in four there was coincident infection with Giardia lamblia and in one with Strongyloides stercoralis.

Although the patients examined represented for the most part persons with gastro-intestinal symptoms, it is of interest that the incidence of E. histolytica in them was lower than in the apparently normal food handlers. Kaplan-Spector, as previously noted, also found a much lower incidence in the clinic patients than in healthy individuals. In this connection Swalm[6] states that "the incidence of E. histolytica may be lower in a group of patients suffering from gastro-intestinal complaints than in a relatively healthy group." In a questionnaire which he sent to leading gastroenterologists throughout the country the reported incidence was only 0.5 to 2%.

Similarly fewer infestations with other parasites including both the pathogenic and non-pathogenic varieties were detected in our series of clinic patients than in the food handlers. Other intestinal parasites besides E. histolytica were found in only 191 or 9% of the patients as against 121 or 18% of the food handlers. Endamoeba coli was the most commonly found parasite and parasitization with two or more organisms was not uncommon.

Discussion: In spite of the massive evidence to the contrary, the tendency to regard amebiasis as a tropical disease persists. In most instances in this series symptoms had continued over a long period of time, and it was impossible to place exactly the geographic source of infection. This difficulty is further increased by the fact that persons may remain symptomless carriers for years only to develop symptoms on change of habit, lowering of resistance, or alteration in some other factor. The great majority of our patients had never been outside the United States and many had never left the Chicago area. Two patients with amebic dysentery definitely traced the onset of their infcction to tropical countries, Mexico and Colombia respectively, and four patients with amebiasis seemed to have acquired their infections in India, Mexico, Guam, and Africa respectively. The remaining 44 infections were acquired in the United States, and more than a third were undoubtedly acquired in the north central states.

The occurrence of cysts of Endamoeba histolytica in apparently healthy individuals has caused much confusion in concepts of the disease. Explanations have ranged from the theory that E. histolytica itself was not pathogenic, the symptoms observed being attributed to simultaneous bacterial invasion, to the view that all persons infected showed some symptoms although these might be revealed only by close questioning or post-therapeutic improvement. More recently, however, the fact that there are asymptomatic carriers and that these probably constitute the greatest proportion of the infected has won general acceptance. As Craig states, however, there is probably no such thing as a healthy carrier, the carrier state representing a delicate balance between the invasive power of the organism and the defensive power of the host. Of the 15 infected food handlers described here, the majority appeared in excellent health; a few on questioning revealed miscellaneous complaints but in only one instance was improvement noted on termination of therapy. Of especial interest is one food handler who, in spite of passing a fluid stool containing considerable mucus and large numbers of motile E. histolytica, stated emphatically that she was in perfect health and never suffered from diarrhea.

Of the 25 patients harboring cystic or precystic forms, three failed to show suggestive symptoms. One was a contact of an infected patient, one had a coincident peptic ulcer making evaluation of symptoms difficult, and one complained only of pruritus ani, the pinworm being the expected parasitic agent. Among the remaining patients, abdominal pain, tenderness, or aching was the most common symptom, occurring in 17. This was located as frequently in the upper, especially right, as in the lower quadrants. In two it occurred substernally. Nervous symptoms such as sleeplessness, dizziness, irritability, or headache and flatus with or without belching and borborygmus were frequently observed, but may not have been related to the amebiasis. In fact, we are inclined to think that such symptoms, so common in functional disturbances of the digestive tract, are frequently encountered in carriers without being related to the parasites. Weakness or fatigue, and moderate temperature elevation, usually 100 to 101 degrees F. were each described by nine persons. Diarrhea was a complaint of six patients, constipation of five, while 11 experienced normal bowel movements. Other symptoms less frequently seen were weight loss and nausea noted by five persons, chills, vomiting and icterus observed in three, night-sweats in two and pruritus ani in two.

Among the ten patients showing motile forms in the stools, diarrhea was the most frequent complaint as expected. This occurred in nine patients. In the other the trophozoites were detected in mucus deposits accompanying the formed fecal mass. Gross blood in the stool was noted by eight patients, flatus by five, fatigue and weakness or pain by four, weight loss by only three, dizziness or nervousness, temperature elevation, and pruritus ani by two each, and nausea and anorexia by one.

Amebiasis has long been recognized as a chronic rather benign infection characterized by relapses and remissions. The present study emphasizes the chronicity of the infection when untreated or inadequately treated. Patients showing dysentery were able usually to place the onset of their infection more definitely than others. Among nine such cases, the duration ranged from two months to four years with an average of 21 months.

Several patients passing cysts gave definite histories of having had amebic dysentery at some time in the past, in one instance as long as 20 years previously. The question, of course, arises as to whether such cases represent relapses or reinfections. Where intermittent attacks are described over the period of time involved, however, it seems evident that relapse is the explanation.

Of some interest is the fact that of nine patients with amebic dysentery, only two sought treatment for the first time. Two had been recognized and treated in the past but had experienced frequent relapses. The remaining five had sought previous medical attention; two of these had even undergone periods of hospitalization without recognition of the true nature of their condition, although in some instances stool examination was stated to have been performed. These findings attest the lack of "consciousness" for E. histolytica infection and the inadequacy of laboratory diagnosis.

Treatment: Of the 25 persons passing cystic and precystic forms of Endamoeba histolytica, 17 received adequate therapy as judged by negative post-therapeutic stool examinations, six were not treated in the clinics and two, though treated, did not return for post-therapeutic check-up. Of the 17 who received adequate therapy as evidenced by negative stool examination, nine reported complete relief of symptoms; three described improvment; three stated they were in no wise benefitted. One of the last two received simultaneous treatment for peptic ulcer and hence the symptomatic effect of therapy was difficult to evaluate. In another the only complaint was pruritus ani which showed improvement on application of calamine lotion.

Of the ten persons passing trophozoites, nine were treated and all were either completely relieved of symptoms or were definitely improved.

Although the methods of treatment vary, the general trend has been to give emetine HCl injections for a period of ten days with simultaneous or subsequent oral administration of vioform, chiniofon or carbarsone. Chiniofon enemas are sometimes given also. For carriers, usually one ten-day course of chiniofon, carbarsone or vioform with repetition in a week or so is sufficient.

Of 37 patients and food handlers receiving treatment, 35 were available for one or more post-therapeutic stool examinations. In six cases only one post-therapeutic examination was obtained. The others received three to 13 examinations from one week to 16 months after treatment without detection of a single relapse. This finding would indicate that cure may be effected if treatment is vigorously applied. Caution must be exercised, however, in the interpretation of cure as recurrences have been observed by many workers despite negative post-therapeutic examinations. Wherever possible, the patient should return for reexamination at intervals of six months. Tonney, Hoeft, and Spector[7] noted recurrence in a food handler three years after treatment; this was interpreted as a relapse. But as the contacts of most cases are not checked and the individual returns at once to the same environment, reinfection may be involved more frequently than is supposed.

Of seven patients found to have persistent infection despite previous treatment for amebic dysentery, four had received emetine injections alone. This finding serves to reemphasize the inadequacy of emetine HCl in eradicating the infection. One had been treated with carbarsone, one with an arsenical he could not identify, and one with enterovioform. Administration of the latter compound was found to be followed almost immediately by relapse by Manson-Bahr.

Because of a somewhat atypical clinical picture, brief outlines of five cases are presented.

1. R.K., a 20 year old white female, entered the Chest Clinic complaining of a feeling of pressure beneath the sternum and of weight loss. On questioning no gastro-intestinal symptom except slight belching was elicited. The blood picture was normal. Stool examination revealed cysts of Endamoeba histolytica Treatment, consisting of amebicides and a high caloric diet, was followed by a prompt remission of symptoms and gain in weight.

2. B.P., a 46 year old white male, entered the Gastro-intestinal Clinic complaining of a sense of fullness across the epigastrium, belching and a loss of 7 to 8 pounds weight. Bowel movements were normal. Treatment with belladonna and phenobarbital did not effect improvement. One year later he returned complaining of pruritus ani, at which time the feces were examined and cysts of E. histolytica recovered. The patient failed to return for treatment.

3. R.G., a 50 year old white male, entered the Allergy Clinic complaining of a loss of 40 pounds in three months, rumbling and gurgling, periodic epigastric burning, anorexia, nervousness and constipation. A slight yellow pallor and slight anemia were noted. He gave a history of a similar attack seven years previously. Stool examination performed three years after his original entry, during which time symptoms had persisted, revealed abundant cysts of E. histolytica. This individual, from out-of-town, was engaged with his family in the manufacture of candy at home. He failed to return for treatment, but finally was induced to consult his local physician. The physician, who stated he had never treated a case of amebiasis, continued injections of emetine until toxic symptoms became manifest. Great difficulty was experienced in obtaining vioform in the local pharmacies.

4. J.S., a 37 year old male, entered the Medical Clinic complaining of exhaustion, weakness, chills and fever, joint and muscle pains, night sweats and dyspnea. There were no gastro-intestinal symptoms or signs. The highest temperature recorded was 102.6. A history of amebic dysentery four years previously was obtained. Cystic and precystic E. histolytica were identified in the stools. Treatment with emetine HCl and vioform resulted in prompt and complete remission of symptoms.

5. G.E., a 34 year old male, entered the hospital on the pneumonia service, complaining of right upper quadrant pain, chills and fever with an afternoon rise up to 102 degrees, weakness and loss of 25 pounds weight. An icteric tinge of the skin was noted and the patient described occasional dark urine and light stools. Cystic and precystic forms of E. histolytica were identified in the stool. Prompt and complete remission of symptoms followed therapy. A diagnosis of amebic hepatic abscess seems justifiable in this case, and probably also in the previous one, although there were no definite localizing signs except the slight icterus in Case 5.

SUMMARY

An incidence of infection with Endamoeba histolytica of 1.8% was found among 2,691 persons comprising 2,024 patients of the University of Chicago Clinics and 667 food handlers. The incidence among the patients was lower, 1.7%, than that among the food handlers, 2.4%.

Attention is called to certain epidemiological and clinical observations.

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POLLUTIONS — A PSYCHIC AND SOMATIC STUDY

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Involuntary discharges of semen occurring during sleep, accompanied with erotic dreams and erection, may recur so frequently as to make the affected person physically and mentally ill. The usual treatment consists in medicating the seminal vesicles, the prostate gland, the genital canal and the ejaculatory ducts. These are the supposed underlying seats of pathology. This sort of interference has been notoriously inadequate. Only a paltry number of successes have been claimed for this system of combatting a veritable nuisance. We ought to know more about nocturnal emissions and to have at our disposal ways and means of curtailing needless seminal losses. I propose to show that there is a pressing need for radically changing our attitude toward the problem of pathological emissions and to include a plan whereby the sorely distressed may find relief.

Urologists are divided into several schools of opinion as to the best way to handle the patient who states that he is being "knocked out" by his seminal losses. One group — and the bulk of urologists are in this category — believe that the cause is an inflammation of the sexual parts. Accordingly, they resort to local treatment. Another group adhere to this scheme, but also include sedation of the nervous system. The third school regard nightly emissions mainly as a psychic ailment, though recognizing that local and constitutional factors may occasionally be involved, either directly or indirectly. Unquestionably, the best, the quickest and the most lasting improvement follows from adhering to the view that unusual sexual mechanisms are due to a disturbance of the mind as well as the body.

An error in medical logic is responsible for much of the confusion which exists in medical circles concerning the etiology of pollutions. Prior to the time when the practice of medicine was established on a firm foundation — and this date, by the way, was not so very long ago — physicians treated symptoms rather than the disease itself. If a man complained of a cough, the physician would prescribe a cough remedy. Whether the cough was the end effect of bronchial irritation, cardiac weakness, or caused by inhaling irritating fumes, was not seriously considered. If the patient got well, all credit went to the ingredients of the prescription. Usually, patients would tell their friends about the virtures of their prescription and would even advise them to take the same medicine. People would swallow any highly praised preparation without ever stopping to inquire whether it was indicated in their case or not.

As time went on and physicians began to view illness in a scientific way, they discovered that there are many causes for a cough. Doctors listened carefully to the patient's breath sounds, they examined the sputum, they took X-ray pictures of the chest, and made use of every known device to discover what elements were inducing the cough. Thus we see that physicians no longer were content to treat symptoms but searched for causes. To secure permanent improvement it was essential also to treat the disease and the patient.

This wave of progressiveness was very catching. The genito-urinary specialists ceased trying to stop night losses by numbing the patient's sexual sensibilities. They wanted to put the proposition of continued seminal losses on a scientific basis. They said that pathologic seminal emissions were an expression of diseased or inflammed seed sacs. They concluded, therefore, that no improvement could ensue unless the structures which were in a state of agitation could be quieted down. Their argument was that pollutions were a symptom and that it was no more sensible to treat a sexual symptom than it was to manage a cough without getting down to the root of the matter. Every disease had a cause, said the pathologists, and it was senseless to treat pollutions unless one got at the basic trouble — some irritation in the seminal reservoirs.

Attempts were now made to assist, in a scientific way, the man who stated that his very vitality was being drained via night losses. Sexual tenseness was lowered by the administra-

tion of nervous system sedatives. Strong caustic solutions — and even the caustic substance in a pure state — were injected or applied to the veru montanum in the hope of fortifying the valvular action of the ejaculatory ducts. All this was done on the theory that the seminal ducts had to be tightened. Thus the seminal secpage would be stopped. But it wasn't. Curiously enough, interference, or worse yet, meddling of this sort only served to heighten sexual ardor. The more vigorous the treatment, the more troublesome were the pollutions.

What mistake were physicians making? Why was this sort of approach a total failure? Had not the so-called authorities, who had given special study to such matters, reasoned correctly when they stated that frequent ejaculations of semen during sleep were only a symptom and that no return to normalcy could be brought about unless the vesicles were made to behave? Yes, an erroneous deduction had been made! While it was true that pollutions were rightly regarded as a symptom; and while it was also a fact that the semen was ejaculated during sleep because the seminal vesicles contracted, it did not follow that the vesicles of necessity were diseased or inflamed. The propensity for the vesicles to empty was generated in a great number of instances by other factors. Few physicians then knew, what many more know today, that there is a higher power than the local sexual regulators which can start or stop seminal emissions; and that all mighty controller is in the mind. It has taken researchers a long time to learn that mental excitation can, and does, make the sexual apparatus work during the time when the body is almost at complete repose.

It is easy to see why our medical forbears accepted false dicta as the truth. They regarded abnormal seminal emissions as a symptom of seminal vesicle disease. It was all so perfectly obvious it could not be otherwise. So they thought. They said that seminal discharge was a consequence of a state of irritation in the seed sacs, just as the internal medicine experts had demonstrated that a cough was initiated by some irritant in the lung. As we now know, the two disorders are not comparable. In respiratory disease, we usually have the simple irritant and its direct effect on the lung. In the case of pollutions, we have to contend with a third factor — the brain. Physicians in the old days did not pause to consider that a sexual thought buried in the mind could be responsible for pollutions.

Only by understanding what goes on in the thinking apparatus, and only by knowing how to extirpate disturbing and provocative thoughts which incite unconscious sexual arousement and ejaculation, can the annoyance of involuntary emissions be overcome.

Since the turn of this century physicians who treat sexual disorders began to realize in all seriousness that the therapeutics of nocturnal pollutions was in a muddled state. Many prudish general practitioners considered it somewhat undignified to prescribe for any form of sexual weakness. Even the sexual disease experts were reluctant to discuss the relationship of sexual psychology to sexual pathology.

During the past two decades there has been a marked change in the attitude of the laity as well as the profession toward the pollution problem. Intelligent folks realized that an improperly functioning sexual gland could be corrected just as well as a disordered stomach.

Before analyzing the situations which are related to unusual night losses, it is well to say a few words about normal nocturnal emissions. The frequency of seminal vesicle expression varies with the age and sexual status of each individual. Adolescents come to know sexual maturity in a frightening episode. The virile fluid — somewhat akin to the way geysers spout through Mother Earth — breaks past its barriers, and informs the lad that he is now a man. Young vigorous males who are easily thrilled to intensity by the mere companionship of a fair sex member are bothered by pollutions not infrequently. Engaged young men may experience a night loss once or twice a week during the hectic love making period. A considerable difference in the sexual activity of various men is noted. Of course exuberant males full of nascent energy will exhibit physiological depletion much more often than the young man whom nature endowed with a sparing amount of virile sparks. We find that in middle-aged bachelors there are considerable lapses between their periodic pollutions, for they are less inclined to envisage romantic episodes. Allowing for individual variation, it can be said that pollutions occurring once a week, or once a fortnight, are compatible with a stable

nervous and sexual system. Of course, if auto-erotism or coitus intervenes, it serves as a sexual vent, and accordingly the number of pollutions will decrease or they may not even occur at all.

The consensus of medical men has it that pollutions are a physiological process and serve as a body safeguard. They are normal and healthful, provided the individual is buoyant and refreshed after their occurrence. If the nocturnal emission serves to relieve sexual tension, it has fulfilled a useful purpose and is regarded as nature's way of disposing of excessive sexual secretion.

How, then, are we to explain the nightly seminal pollution occurring in married men enjoying normal sexual relationship? If the pollution is a physiological safety valve, what causes them to happen night after night until they make a wreck of a man? If the pollution is a mechanical evacuation, why do they recur with such unnecessary frequency?

Granted that the problem seems very baffling; it is none the less solvable. We can best accomplish our task by dividing the subject into its proper phases by classifying pollutions into four groups: 1) mechanical pollutions, 2) substitute pollutions, 3) psychic pollutions, and 4) pathological pollutions.

Mechanical or physiological pollutions are the effects of continence. They occur in young males, or in mature men, who cannot respond to the plea of nature. Substitute pollutions are the sort which take place if the sexual mate is not available, and the body must exercise its prerogative by sweeping out the virile substance in a safe and sane manner. Psychic pollutions are the effects of pleasing mental stimuli. Pathological pollutions ensue when the sexual mechanism is set into riotous motion. They may be due to psychic processes, undue fatigue, worry, local disease, systemic disease, disorders of the nervous system or other factors.

Abnormal pollutions either in the married or single man usually are the effects of psychic stimuli which lie concealed in the unconscious strata of the mind and flare into activity when a chain of unusual circumstances arises. Anxiety concerning the future of mankind, or a state of terror which is traceable to the impressions left by reading about the atrocities of war, can serve to weaken the inhibitors which guard the well being of the mind. Why should one who is sad have his unconscious thoughts turn to sexual reverie? It might be due in part to the toxic action of fatigue products, or it may be that the mind wants a pleasant sort of antidote for the usual sordidness it copes with daily. Many years ago, Mosso, the Italian physiologist, pointed out that utter exhaustion could induce unusual degrees of sexual appetitie. During mental confusion psychic intoxicants can operate in like fashion.

Imaginary coitus created in a dream which is sufficiently vivid to develop a vigorous erection and permit the subject to semi-consciously enjoy voluptuous sensations, climaxed by orgastic sensation and orgasm, is a form of mental auto-erotism — a non-guilty, non-sinful type of self-gratification. A man cannot be held responsible or censured for the wet-dream, since it can be claimed that he was oblivious to the entire act until he awakened and discovered what had transpired.

To help the man who ardently pleads for relief from nightly seminal losses, the physician must learn what goes on in the troubled mind. This is accomplished by obtaining the history of the person's sexual life. A record of this kind cannot be got as one wheedles out an account of the usual diseases and ailments of infant and adult life, which the average human being discloses with some degree of pride. A survey of a personality is made by establishing an emotional rapport between the sick man and the one whose function it is to administer aid.

If one would understand the modus operandi of pollutions, he has to be cognizant of the weaker links in the subject's sexual development. This is a laborious, painstaking, time-consuming task. One must comprehend the degree and extent to which psychic factors have influenced traits of character. In a word, we must learn how the patient's life has been colored by emotion and to what extent the emotional component has been repressed.

The first requirement in managing a case of pathological nocturnal emissions is to inform the patient in all sincerity and honesty that he is not undergoing a process of sexual debility. To this assertion the subject will counter by asking what, then, is the cause of his languor, loss of appetite, lack of zest for living, headache, pain in the back, inability to carry on his business, smarting and burning sensation in the eyes,

pains in the penis and testicles, as well as a thousand and one other complaints. My reply is that many of these disturbing conditions are the effects of apprehensiveness concerning the needless loss of semen.

One of the first things we learn about men who are weighed down by wet-dreams is that they believe their health is undermined in the same way that excessive intercourse works its damage. This idea originated many centuries ago when professional alarmists — because of their ignorance — tried to lay all nervous disorders to the repeated shocks which the brain and spinal cord suffered from loss of semen during the sexual orgasm. Thus were ordinary folk baffled by astute befuddlers who profited neatly thereby. The red herring of "excessive coitus" is still pulled out of the bag whenever it is necessary for the physician to have an alibi for medical incompetency. The time is rapidly drawing to a close when this shallow explanation is acceptable.

A short lecture on the physiology of the nervous system serves to inform the sufferer that semen losses do not damage the cells or ganglia of the nervous system. It is astonishing to learn how little most men know about their own body. They allow such vivid expressions as "muscle wastage," "brain decay," "progressive atrophy," "lack of secondary sexual characteristics," "wasting degeneration," and "fatty degeneration of the spinal cord" to occupy a foremost seat in their mind. Alas! And this is much more disturbing — they associate these phrases with the ill effects of over-exercise in sexual activity.

A pertinent dissertation on sleep is next on the agenda of re-education. The man who terms himself the victim of uncontrolled emissions must be made to realize that the sleeping period is not a state of narcosis. When the watchmen of the body are given a rest, the mind can play in an abandoned manner. Therefore, if nighttime or the sleeping period is the only interval in which the individual can enjoy unrestricted psychic play, then it is the physician's function to train the patient to alter his work and recreational program so that he will not try to do all his pleasure thinking when asleep.

Diet is of importance in some cases. I have succeeded in putting a quick end to a pollution habit which had extended over a nine month period by altering the program of the midnight feast. This person indulged freely in eating sausage, cheese, bread, pickles, and other delicacies just before retiring. He hated to give up his bedtime snack, but when he took notice of the absence of nocturnal emissions on the nights he abstained from eating, he readily acquiesced.

A revamping of the subject's pattern of life is indicated in most instances. There comes to my mind a case of a married man who dearly loved his wife and three children. On the surface he had not a worry in the world. But he was a man who was wrapped up in organization work. As chairman of numerous committees and delegate to conventions, his physical and mental reserve was sorely drained. True, he was proud of the honors which were heaped on him, but he was not aware that he was paying a terrific price for them. I recommended immediate resignation from several positions, and the effect was as startling to the patient's family as it was to himself. The moral was that the patient was cracking under a load and the pollution was the consequence of recourse to a type of mental relaxation which he was not getting in his sexual life. Though he was enjoying sexual relations with his wife, he was deprived of any true psychic relief because he indulged at the end of a busy day when he was mentally confused. During sleep, when more perfect peace of mind and body was to be had, the sexual mechanism could function in an unconstrained manner.

A splendid illustration of what can be accomplished without the patient being penalized by pain is seen in the case of a young man who reported continued pollution in spite of the treatment received from several urologists. How could he expect to obtain any improvement when all other urologists handled such cases alike? I informed him that no local treatment would be instituted. This seemed like a new deal and he accepted the plan. A detailed investigative study disclosed several pertinent clues. One very obvious restriction in his amative life was his apron string attachment to his mother. This was so firmly bound that any opportunity for marriage seemed like a hopeless proposition. By adopting a plan of action

which provided more hours of escape, the young man freed himself of bondage and from nightly seminal losses as well.

No longer do physicians look upon functional sexual ailments as due to pure psychic or organic causes but as a combined proposition. This relationship is best termed the "psychic-somatic factor." Just as we have spastic action of the colon, so, too, there exists a nervous or spastic bladder, a spastic prostrate gland and spastic action of the seminal vesicles. It is often very difficult to find all the factors which ignite the sexual system, but these can be detected by careful observation and by tracking down the mysterious and disturbing emotions. This is the best mode for effecting quick improvement in all instances of pollutions. Seminal losses can be stemmed by studying the individual's mental processes and directing the dynamic forces of the body along proper channels.

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THROMBOSIS OF INTRACRANIAL VENOUS SINUSES IN MIDDLE EAR SUPPURATION

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The otological literature contains a profusion of reports on the subject of venous sinus thrombosis complicating middle ear suppuration and many exhaustive reviews of the literature on the subject have been made.

The present report will be directed chiefly to two phases of this problem which have come into prominence in recent years, and their influence on the management of this complication, namely, the association of sinus thrombosis with petrous pyramid suppuration, and the relative place of chemotherapy and surgery in the treatment.

The report is based upon twenty-five consecutive cases which are grouped in Table 1.

Group 1 includes all cases in which an obliterating thrombus was seen and removed at operation or was seen at necropsy. The extent of the thrombosis varied from a simple block in the jugular bulb to a thrombosis from the vein in the neck up to the superior longitudinal sinus. The six fatalities occurred in this group and will be discussed later.

Groups 2 and 3 include cases in which although an obliterating thrombus was not demonstrated, a direct invasion of the blood stream from the focus of necrosis and suppuration overlying a venous sinus undoubtedly existed. With one exception all were cases of prolonged suppuration in the middle ear cell system, with the development of signs of sepsis and a positive blood culture or metastatic suppurative foci from two to four weeks after the onset of the ear suppuration. In all but one, the focus of suppuration was drained or eradicated at operation, followed by rapid recovery of the disease in the ear, although the metastatic suppurations required much longer periods for recovery. In one case, to be described later recovery followed heavy dosage of sulfanilamide, without mastoid surgery.

The problem confronting the otologist in cases of invasion of the venous sinuses by suppuration in the middle ear cell system is first, to prevent extension either by way of the blood stream (metastatic and embolic spread) or by direct contiguity within the venous system to more important regions, and second, adequate drainage of the focus of suppuration within the bone. The focus may be located in any part of the middle ear cell system, since practically all pneumatized areas lie relatively close to some one of the large venous sinuses. Of the 23 cases occurring in acute suppuration, five were secondary to a suppurating focus in the petrous apex. This proportion corresponds closely to the frequency with which pneumatization of the apex occurs which is slightly over twenty per cent.

While an obliterating thrombus was not seen in groups 2 and 3 the condition which existed must be considered as an earlier stage of extension to the venous sinuses. In group 3 a peri-

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Presented before the Section on Eye, Ear, Nose and Throat, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 21, 1941.

sinus abscess with a localized phlebitis was seen in two cases and in a third a suppurating focus in the apex drained, with prompt recovery. The cases in group 2 probably had an obliterating thrombus in the bulb but in both groups 2 and 3 the condition differs from group 1 only in the matter of degree. No case of perisinus abscess is included unless accompanied by definite blood stream invasion.

Table I

		Queckenstedt (Tobey Ayer Test)								
25 cases		No. of Cases	Recoveries	Positive	Negative	Not done	Unsatisfactory	Jugular Ligated	Pos. Blood Culture	Metastatic Spread
	23 complicating acute suppuration									
	2 complicating chronic suppuration									
Group 1. Complete thrombosis, proven at operation or necropsy		18	12	8		9	1	12	8	4
Group 2. Positive Queckenstedt (Tobey-Ayer) test, sigmoid and transverse sinuses clear, but with either positive blood culture or metastatic spread		3	3	3	0	0	0	3	2	1
		Group 3.								
Normal Queckenstedt test, but positive blood culture or metastatic spread or both.		4	4	0	4			0	4	2
Total		25 cases								
Mortality		24%								
Total of Operated Cases		17.4%								
Metastatic or embolic spread to joints or long bones 6 cases, lungs and pleura 2 cases, microscopic brain abscess 1 case Total		28%								
Bacteriology:										
Hem. streptococcus —		21 cases								
Pneumococcus Type IV		1 case								
Anaerobic streptococcus		1 case								
Unknown		2 cases								

QUECKENSTEDT OR TOBEY AYER TEST

Despite the various possibilities which must be taken into consideration this test is extremely valuable as a diagnostic aid. While the positive test is not an infallible sign of a block in the venous channel on that side, the test was positive in every case where it was carried out in the presence of an obliterating thrombus occupying the jugular bulb or vein. A complete thrombosis in the lateral sinus or sigmoid, above the bulb may only give a partially positive result, since the circulation through the cavernous and inferior petrosal sinuses is still intact. Errors in technic or abnormal venous circulation may give an erroneous result, particularly the former, and must always be considered. A positive result is not proof that a block is present but it is strong evidence.

The normal (negative) response to the test is equally valuable in the management of complications, inasmuch as it indicates that circulation probably exists in the lateral sinus, bulb and jugular vein. This does not preclude the existence of phlebitis and localized thrombosis in either of the petrosals, or in the cavernous sinus, and in such cases blood stream invasion may persist for several days before a thrombus extends down the inferior petrosal into the jugular bulb and vein, or from the superior petrosal into the sigmoid. Such a sequence of events was clearly demonstrated in three cases of petrous apex suppuration.

A partial block may indicate a mural thrombus, or as in Case VI of this report it may occur with a complete thrombosis of the sigmoid, but a patent inferior petrosal sinus, jugular bulb and vein.

LIGATION OF JUGULAR

The procedure followed in all cases with a complete thrombosis has been to ligate the jugular vein before clearing out the thrombus. The ligation of the vein below the thrombus with resection of the thrombosed part does not interfere with circulation since that is already interrupted and it provides some protection against embolism. In two cases the lower end of the thrombus was not reached, and although hem. strep. were cultured from the proximal end and chemotherapy was not yet available prompt recovery followed without suppuration in the neck.

In two other instances the thrombus could not be completely removed because of extension beyond the torcula, but complete recovery followed in both cases, also before chemotherapy. The recovery in such cases must be regarded as fortunate however because two of the fatalities in the group occurred as a result of extension into the superior longitudinal sinus.

In the presence of a normal Queckenstedt test ligation of the jugular vein was decided against in three cases. All of these recovered (group 3) although metastatic foci of suppuration were present in two. In this group of cases the most essential requirement from a surgical standpoint is the drainage of the focus of suppuration in the bone. In the more advanced

type, with complete thrombosis, the surgical procedure on the sinus and vein is the first essential, to prevent extension. However, failure to drain the focus in the bone, for instance in an unrecognized petrous apex infection, may still result in a meningitis, although the invasion of the sinus has been arrested.

SINUS THROMBOSIS FROM PETROUS APEX SUPPURATION

Five cases out of twenty-four were secondary to petrous apex suppuration. A brief account of each case will be given. The one case in which the focus of suppuration in the pyramid was not recognized terminated in a fatal meningitis.

Case 1. J. L. (1929) Male, age 66. Bilateral acute middle ear suppuration four weeks duration. Bilateral mastoidectomy. Persistent temporo-parietal and frontal headache on the right side. One week later lateral sinus thrombosis, right. Mastoid revision. Jugular ligation and removal of thrombus. Then one week later retropharyngeal abscess right which was drained. Persistent headache. Death from meningitis 7 weeks after onset.

Comment. The unrecognized petrous pyramid suppuration led to sinus thrombosis, and an abscess in the retropharyngeal region both of which the patient survived, only to develop a diffuse meningitis from the undrained focus in the pyramid.

Case 2. J. S. Child, age 8. Acute middle ear suppuration. Hem. strep. After about two weeks a swelling and abscess in the neck occurred. Drained. Persistent fistula draining pus. Mastoidectomy. Sepsis and sinus thrombosis developed. Jugular ligation and removal of thrombus. Persistent draining fistula in the neck. Nearly one year later meningeal signs developed and a large focus of necrosis in the apex was demonstrated and drained. Symptomatic recovery but persistent purulent drainage from the fistula and evidence of chronic osteomyelitis two years after onset of disease.

Comment. The lateral sinus thrombosis was adequately treated, but the focus of suppuration in the apex had inadequate drainage through the fistula, causing later complications.

Case III. K. Mc M. Male, age 6 (1937) Acute middle ear suppuration 3 weeks. Septic temperature. Hem. strep. Mastoidectomy. Sigmoid sinus widely exposed and normal. Persistent sepsis. Clouded petrous apex on X-ray. Positive blood culture. Apex operation by way of middle ear. Sigmoid sinus still appeared normal. Queckenstedt test doubtful. Sepsis persisted. Three days later revision was done. Sigmoid sinus obviously thrombosed. Thrombosed jugular vein resected. Lower end of clot not reached. Thrombus removed from sigmoid. Recovery. Sulfanilamide used in moderate dosage.

Comment. Sepsis undoubtedly originated from the apex suppuration and thrombosis extended to the bulb and down the jugular vein. The thrombus in the sigmoid developed in the late stages of the sepsis, probably retrograde extension from the bulb.

Case IV. J. L. Female, age 5. Acute middle ear suppuration left. Hem. strep. 3 weeks. Septic temperature. Pneumatized apexes, clouded on left. Mastoidectomy. No improvement. 6th nerve palsy. Positive blood culture. Apex operation via middle ear. Large abscess drained. Queckenstedt test positive on left. Sigmoid sinus normal. Sepsis persisted. Three days later the jugular was ligated above the facial vein. No thrombus, but circulation appeared to be absent. Sigmoid sinus still appeared normal, and blood was freely withdrawn with a needle. Uninterrupted recovery. Sulfanilamide used in moderate dosage. X-rays shown in previous publication.[1] (Figure 15 b)

Comment. Blood stream invasion occurred from the abscess in the apex. The inferior petrosal sinus and jugular bulb were probably thrombosed, but since the thrombus was not seen the case is classed in group 2 in Table 1. The drainage of the abscess in the apex was the essential part of the treatment. The jugular ligation was of questionable value in this case.

Case V. J. K., male, age 6. (1939) Acute middle ear suppuration right, 4 weeks. Sulfanilamide used at home. Admitted with early meningeal signs, and nystagmus in direction of gaze, more marked to the left. Queckenstedt test positive on left. Petrous apexes pneumatized, clouded on right. Mastoidectomy. No cell breakdown. No tracts leading towards perilabyrinthine areas. Dura and sigmoid sinus exposed widely and were normal in appearance.

During the following week sepsis developed and blood culture became strongly positive. Mastoid revision. Sigmoid sinus normal. Apex operation via middle ear. Queckenstedt test still normal on the right. Following apex operation there was an uninterrupted recovery. Chemotherapy was not used. X-rays shown in previous publication.[1] (Figure 14 A)

Comment. Invasion of the blood stream originated from the suppuration in the apex. The obvious explanation for the prompt response to surgical drainage is that the inflammatory process in the wall of the petrosal sinus was still in a reversible stage at the time drainage was instituted. It is comparable to other cases in Group 3, Table I in which metastatic foci had already developed from an abscess around the

sigmoid sinus, but which also healed without interruption of the circulation. Surgical intervention while the process involving the wall of the sinus is still reversible prevents the necessity of surgery on the vein and sinus.

The incidence of invasion of venous sinuses from suppuration in the apex in this series was about 20 per cent which approximates closely the percentage in which the apex is pneumatized in bones over three years of age.

Failure to recognize and drain the focus of suppuration in the pyramid in such cases is likely to be followed by further intracranial complication in spite of the arrest of the process in the venous sinuses by surgery. Accumulating experience also shows that when the focus of suppuration was already developed, either in the bone or in the venous channels, chemotherapy serves the purpose of keeping the process localized but cannot be depended upon to sterilize the focus and prevent later complications. Surgical drainage is still the most essential part of the treatment.

MORTALITY

Including two unoperated cases, seen in extremis the mortality was 24 per cent. A necropsy was performed on five, while the cause of death in the sixth was evident from the clinical picture and operative findings. The cause of death in each case was as follows:

1. Meningitis complicating an unrecognized petrous pyramid suppuration (1929). See Case No. 1 previously described.

2. Superior longitudinal sinus thrombosis and multiple joint suppurations. Child of 4 years. (1935) This case was seen in extremis and had no surgery on the mastoid or lateral sinus.

3. Superior longitudinal sinus thrombosis (1940). At the mastoid operation a large extradural abscess was found in the posterior fossa with the lateral sinus in the sigmoid and transverse portions completely thrombosed. Extension to the longitudinal sinus already present. Sulfanilamide therapy prolonged life for weeks but failed to cure. Irreparable damage had probably occurred before the therapy was instituted since a spastic state already existed. See Chart No. 1.

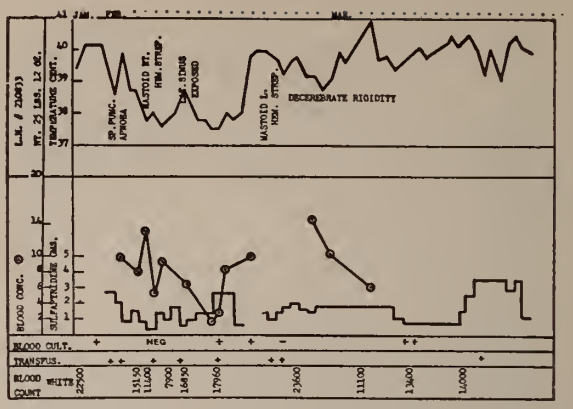


Chart No. 1. Suppurative otitis media, extradural abscess in the posterior fossa, thrombosis of the lateral sinus and superior sagittal sinus terminating fatally in a child of one year. Extensive thrombosis present before treatment was begun.

4. Meningitis, pneumococcus type IV. Infant of 7 months (1937) Advanced diffuse meningitis and jugular bulb thrombosis existed at time of admission. Jugular ligation was done but the sigmoid sinus was free from thrombus. Sulfanilamide therapy unsuccessful. Death from meningitis.

5. Abscess in the cerebello-pontine angle — child of 4 years. The disease in the venous sinuses was controlled by jugular ligation and removal of thrombus from the lateral sinus, but an abscess localized in the cerebello-pontine angle went unrecognized and resisted chemotherapy. Child did not have diffuse meningitis. He developed an ipsilateral hemiplegia 24 hours before death. See Chart No. 2.

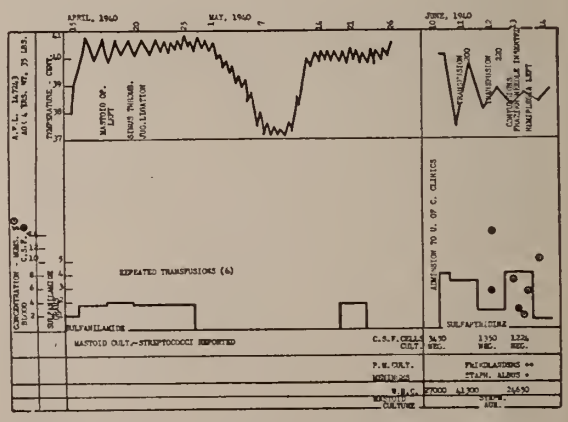


Chart No. 2. Suppurative otitis media with lateral sinus thrombosis and localized abscess in the cerebello-pontine angle. Sinus thrombosis successfully treated but the cisternal abscess proved fatal.

6. Bilateral embolic extension to lungs and bilateral massive empyema was the direct cause of death in a 26 year old male adult with cholesteatoma, lateral sinus thrombosis, and temporal-lobe abscess. Multiple microscopic brain abscesses were also present. Anaerobic streptococcus on culture.

A review of these fatal cases serves to emphasize three essential points in management of sinus thrombosis.

1. The suppurating thrombus in the sinus must be drained or eradicated before such extensions occur as longitudinal sinus thrombosis, localized intracranial abscess, basilar meningitis, massive embolism to the lungs or metastases to other vital areas.

2. The suppurating focus in the bone must be adequately drained or further intracranial complication is likely to develop even although the sinus thrombosis heals. The middle ear cell system extends into the petrous apex in about one case in five. Suppuration in the apex accounts for about 20 per cent of sinus thrombosis and in such cases the apex requires surgical drainage.

3. After a suppurative focus has been established in the bone or within the venous sinuses around the bone, chemotherapy should be considered as the first step in the treatment, but can not be relied upon to effect a cure or to hold the infection in check for more than a limited period.

RELATIVE PLACE OF CHEMOTHERAPY AND SURGERY

The following group of cases have been selected to illustrate the relative place of chemotherapy and surgery in cases where a suppurative focus in the bone is already established and invasion of the blood stream has occurred.

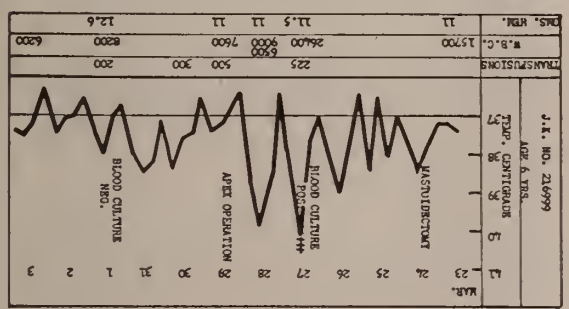


Chart No. 3. Suppurative otitis media with extension to the petrous apex. Invasion of the blood stream, probably the inferior petrosal sinus, with prompt recovery following simple drainage of the petrous apex.

1. Chart No. 3 shows the clinical course in case V. Surgical drainage of the suppurating focus in the apex was followed by a dramatic disappearance of the blood stream infection and uninterrupted recovery. This type of clinical result following adequate surgical procedures both before and after a suppurating thrombus was present has been common occurrence before the advent of chemotherapy. The essential features were that the surgery be adequate and be carried out before hopeless extensions of the infection had occurred.

2. Chart No. 2 shows the clinical course of the case which terminated fatally as a result of an undiscovered abscess in the cerebellopontine angle.

In this case the surgical procedure on the venous channels gave a satisfactory result, but the abscess beneath the tentorium which was already present in all probability, resisted chemotherapy. The correct diagnosis was only apparent at necropsy. This case illustrates one type of serious complication which may produce a fatal result regardless of arrest of the disease in the venous channels and chemotherapy.

3. Chart No. 4 illustrates the limitations of chemotherapy in the presence of suppurating thrombus within the lateral sinus.

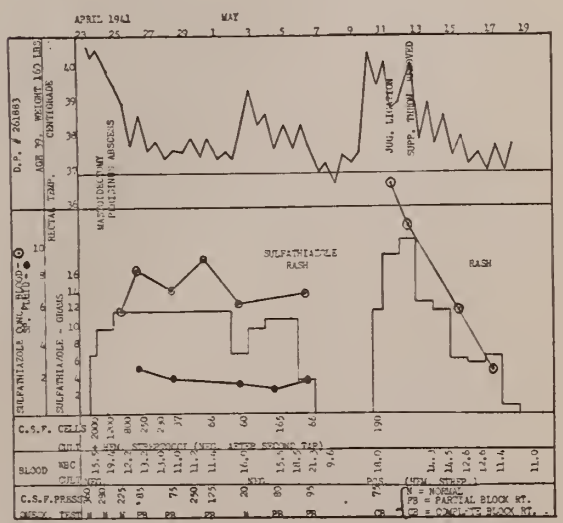


Chart No. 4. Suppurative otitis media with diffuse suppurative meningitis, extradural abscess and complete thrombosis of the sigmoid sinus, treated by sulfathiazole and surgery. High concentrations of sulfathiazole cured the meningitis but failed to sterilize the suppurating thrombus within the lateral sinus.

Case VI. D. P. This male patient of 39 years was admitted with middle ear suppuration of 12 days duration and diffuse hemolytic streptococcus meningitis. Queckenstedt test normal. Sulfathiazole in dosage of 12 grams daily and exenteration of the cell system and extradural abscess in the posterior fossa resulted in a rapid cure of the meningitis.

A chill and elevation of temperature from 10th to 13th postoperative days was followed by subsidence of all symptoms until the drug was stopped for 2 days then septic temperature, chills, and positive blood culture appeared.

Recovery followed ligation of the jugular and removal of the suppurating thrombus from the sigmoid and lateral sinuses, and heavy dosage of sulfathiazole.

Comment. The diagnosis of thrombosis was not established early because of the normal dynamics (Queckenstedt test) and the favorable response to therapy. Because the patient had suppurative meningitis repeated lumbar punctures were done and the dynamics tested each time. The Queckenstedt test could be considered as definitely positive only on May 10th. On all previous tests there was a slightly a-symmetrical response, the rise being less prompt and less high on the diseased side, although there undoubtedly was a complete block in the sigmoid sinus during most or all of the time in hospital.

This case illustrates two important points in the management of sinus thrombosis.

A. A complete block may exist in the sigmoid sinus, and yet the Queckenstedt test show only a slight or moderate a-symmetry on the two sides. The explanation which seems most probable in this case was that circulation through the cavernous and inferior petrosal sinuses, the jugular bulb and vein was not interrupted until long after the block in the sigmoid, thereby accounting for the rise in C.S.F. pressure on jugular compression, although less than normal, until further extension of the thrombus followed withdrawal of the chemotherapy.

B. The chemotherapy (sulfathiazole) was adequate to cure the meningitis, but still incapable of sterilizing the suppurating focus within the thrombosed venous sinus.

4. Chart No. 5 shows the clinical course in a case in which definite indications of mastoid suppuration were present, along with signs of sepsis and a strongly positive culture of hem. strep. in the blood stream. Complete recovery followed sulfanilamide therapy without surgery.

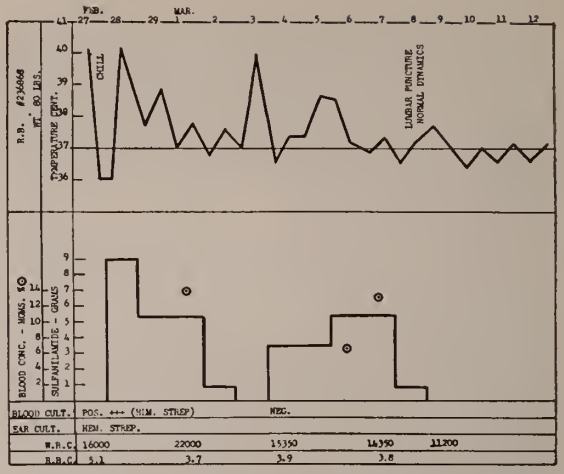


Chart No. 5. Otitis media and clinical evidence of venous sinus invasion in the second week of disease. Cured by sulfanilamide therapy without surgery.

Case history: R. B. Male, age 10. Onset of left otolagia 2-20-40 and spontaneous otorrhea the following day. Intermittent fever during the following six days. Marked vertigo on seventh day. Profuse purulent discharge from posterior perforation on admission, with acute tenderness over posterior part of the mastoid. Chills on admission. Positive blood culture on 2-27-40 and 2-28-40.

The course of the illness is shown in Chart 5.

Comment. It is possible in some cases to obtain a cure with chemotherapy alone even after signs of suppuration and invasion of the blood stream has occurred. It should be emphasized however that according to experience obtained up to the present, a cure by chemotherapy alone after a focus of necrosis and suppuration exists in the bone is the exception, rather than common occurrence. The safest course to pursue in such cases is chemotherapy plus adequate drainage of the focus of suppuration.

On the basis of experience with 25 consecutive cases of proven invasion of the venous sinuses from middle ear suppuration certain fundamental points regarding the care of this condition may be emphasized:

1. This type of complication whether it is already existent or only impending constitutes an urgent situation.

2. The first step in treatment should be chemotherapy. Recent experience favors sulfathiazole as the therapeutic agent of choice. An adequate concentration of the drug (blood

concentration of 6 to 10 mgms. per cent) should be obtained as soon as possible. This relieves the urgency for surgical interference.

3. The second stage, and the most essential part of the treatment, is adequate surgery. Extension of the suppuration can be temporarily prevented by the use of the drug but in the majority of cases adequate surgical drainage is essential in order to obtain a cure.

4. The surgical treatment should accomplish two objectives in order to be adequate: The removal or adequate drainage of the focus of suppuration within the bone and adequate drainage or removal of the suppurating thrombus within the venous channels.

The surgery should be carried out before other intracranial complications have developed either from the suppurating thrombus or directly from the focus within the bone. Otherwise the intracranial complications will have to be dealt with in the manner depending upon the particular complication present.

5. Five cases, or 20 per cent of the group, occurred secondarily to petrous apex suppuration. In such cases drainage of the suppurating focus of the apex is essential to prevent further complications, although the sinus thrombosis may have been arrested.

6. It seems probable that adequate chemotherapy if given in all cases of severe middle ear suppuration at the onset of the disease will prevent the development of complications of this type. However, when the disease has progressed to the point of necrosis and breakdown in the cell system or suppuration within a thrombosed venous sinus chemotherapy alone will not eradicate the disease.

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DISCUSSION

Dr. Alfred Lewy: There are two outstanding ideas in Dr. Lindsay's most excellent paper. The first one has been preached for many years but still requires reiteration. That is, that in acute surgical mastoiditis the operation should consist of complete exenteration of all cellular structures of the mastoid. To quote Neumann — "The operation for acute mastoiditis as radical as possible." This does not mean necessarily curettage of the antrum, which is recommended only when there is definite breaking down of bone in that region, but it does mean complete exenteration of the mastoid tip, of the petrous angle and zygmatic and retrofacial and retrosinal cells, and the follow-up of every lead of pus or broken down bone until normal tissue in encountered. If, in doing this exenteration, the dura or sinus are accidentally uncovered, it is not a matter of great moment so long as they are not damaged. A good mastoid operator should have no fear in approaching these structures. If the bone is being removed by mallet and gouge, he must be sure that the gouge is sharp and has no nicks in the edge. I prefer the Alexander type. The rongeur is used only for overhanging bone.

The second important contribution by Dr. Lindsay is calling attention to a possible destruction of bone or accumulation of pus in the petrous apex, which may be overlooked. One must consider the clinical history and the possible immediate findings of fifth nerve pain, trismus, tenderness on tapping in the preauricular region, and the X-ray. At the Eye and Ear Infirmary we routinely take a base plate showing both petrous portions, so as to have this for comparison later on in case the question of petrositis comes up. If that question arises, other positions, such as the Stenver, are also taken. I must confess, however, that x-ray information regarding the temporal bone is very difficult of correct interpretation; still we cannot do without it.

One patient — Case No. 5 of the list of fatalities — who had a cerebello-pontine angle accumulation of pus, might possibly have been saved by drainage of the cisterna pontis lateralis, as described by the in the Archives of Oto-Laryngology, June, 1928. I believe I saved at least two meningitis cases by this operation before the days of chemotherapy. It is indicated in labyrinthogenous meningitis or when one has reason to believe that there is an accumulation of pus in the lateral cistern.

Dr. Brunner, in the recent April issue of the Archives of Oto-Laryngology, calls attention to the latent pre-operative lateral sinus infection. I believe it is good surgery in all cases in which the pre-operative course of disease suggests a possible sinus involvement, to uncover the lateral sinus at the original operation. This is, I believe, best done by the mallet and gouge, as described above, followed by a Kerrison type of rongeur. In my personal experience, the lateral sinus has never been unintentionally opened or otherwise damaged by this technic.

The question of ligation of the jugular is not yet settled. My practice is to ligate and excise, including the mouth of the common facial, if no bleeding is obtained from below or if metastases are present.

Another interesting contribution by Dr. Lindsay is the successful use of sulfathiazole in Streptococcus meningitis, despite the theory that this drug does not pass the blood-brain barrier sufficiently. Dr. Bernard Cohen has recently reported a case of Staphylococcus meningitis cured by this drug.

Statistically, otogenic venous sepsis does not appear to have a better recovery rate since the advent of chemotherapy. I believe, nevertheless, that the incidence of this complication is less. This has not been demonstrated statistically so far as I know.

Dr. John R. Lindsay, Chicago (closing): I want to thank Dr. Lewy for his discussion. I quite agree that in that particular case, if we had diagnosed an abscess beneath the tentorium we might have been able to save the patient. The difficulty was that the child did not have a diffuse meningitis. He had increased pressure, but only a few cells in the spinal fluid. He was in our hands only a few days. He developed a left side hemaplegia before he died.

DIETHYL STILBESTROL

S. D. Soule, M.D., F.A.C.S.

ST. LOUIS

Diethyl Stilbestrol is an active synthetic product of unusual estrogenic potency. Stilbestrol is indicated in all such cases as warrant estrogen therapy. A voluminous literature corroborates the impression that there is no question as to the efficacy of this drug. The "Stilbestrol" which has been the subject of study during the past three years is the "diethyl" form. Reference in the literature to Stilbestrol is to this diethyl compound.

Stilbestrol has the fortunate property of being therapeutically active when administered orally. Via this route, it is as effective as by subcutaneous injection. It is, furthermore, more active than most natural or synthetic estrogens available on the market, and is infinitely less expensive than the estrogenic preparations generally prescribed at present.

Early in the phase of study of Stilbestrol, when knowledge of proper dosage was meager, there was general notice of unpleasant reactions to the drug. These undesirable symptoms were mainly gastro-intestinal, nausea and vomiting, occasionally headache, vertigo, tinnitus, sense of pelvic pressure and other symptoms were noted. The question was raised naturally as to whether these were toxic symptoms and that possibly, therefore, Stilbestrol was an unsafe or dangerous drug. These symptoms have been eliminated almost entirely since minimal therapeutic doses have been worked out. The previous undesirable responses were due apparently to excessive dosage. However, there was and may still be some question as to the toxicity of Stilbestrol. It is not necessary to enumerate the extensive bibliography in relation to this question. We here report the follow-up findings of a series of ten patients who were under constant Stilbestrol therapy from six months to two years.

When we first began to use Stilbestrol, the dosage was varied from a fraction of a milligram to as much as thirty or forty milligrams per day. We determined the adequacy of the drug and the ideal dosage by the amount necessary to control the symptoms for which the drug was prescribed. In many patients the symptoms complex was checked with such objective tests as vaginal smears, but we have found that the best clinical evaluation obtained from the "symptom-response" of the patient. Gradually we discovered that an average dosage of one to two milligrams *or less* per day was an adequate amount of drug with which to anticipate satisfactory estrogenic response. The dosage is adjusted when the desired effect has been attained. When a result has been reached, dosage is reduced gradually to maintain the proper balance in such patients who require estrogenic therapy over long periods of time.

It has been generally accepted that thyroid is a valuable adjunct to much estrogenic threapy. Stilbestrol and thyroid are compatible. We have used the combination frequently. Dosage of Stilbestrol has diminished even more under such regime. From 0.25 to 0.50 mg. daily with such thyroid dosage as is indicated by basal metabolic rate has proved most efficacious.

Contraindication to the use of Stilbestrol refers back to the indication for its use. Once it is deemed advisable or necessary to administer estrogens, there is no contraindication to its use. Occasionally it is necessary to discontinue medication because of the side effects, but this is not a contraindication to its use. This incidence of intolerance to the drug has been less than five per cent since smaller dosage has been employed. We have prescribed Stilbestrol to menopause women who had had previous

Read before the Franklin County Medical Society, Benton, Ill., Nov. 26, 1941.

STILBESTROL FOLLOW-UP

Pt.	Daily Dosage mg.	Date	Wt.	B.P.	P	BMR	RBC	WBC	Hg. (Sahli)	Differential E	St.	Seg.	L	M	Urine Alb.	Sug.	Micro.
L.M.	1.0 to	2-5-40	121	100/60	76	+ 7	3.86	7200	84						0	0	No casts
	0.1	5-1-41	129	104/70	70	—18	4.49	6200	86	1	1	56	40	2	0	0	No casts
E.H.	2.0 to	11-3-39	106	118/70	80				88						0	0	
	1.0	10-5-40	109	110/70	76	+ 7	5.5	10600	89						0	0	
		4-9-41	109	112/70	72	—17	4.48	7200	81	3	1	63	29	4	0	0	No casts
P.S.	1.0	3-12-40	153	106/70	80	— 8									0	0	
		5-10-41	150	114/74	76	+ 3	4.3		79	3	0	61	35	1	0	0	No casts Occ. wbc.
M.S.	40.0	10-4-39				—30	4.2		75						0	0	No casts
	to 0.2	4-2-41				+ 7	4.47	8900	88 B_1	1	1	68	27	2	0	0	No casts
D.S.	4.0 to	10-23-39	133	108/60	84	—37									0	0	.
	1.0	2-2-40	135	108/60	82	—12									0	0	.
		4-7-41	134	120/80	66	—27	3.99	7000	76	2	2	50	43	0	0	0	No casts
A.S.	1.0	8-10-39	175	100/60	70										0	0	.
		5-7-40	178	90/60	82	— 7	4.49	6550	84	1	0	51	45	0	0	0	No casts
H.K.	1.0 to	6-5-39	150	126/80	70		4.75		88						0	0	
	0.2	7-5-40	141		78												
		4-24-41	145	122/60	68		4.82		90	2	0	68	27	3	0	0	Occ. wbc.
L.K.	1.0 to	5-15-40	140	110/70													
	0.15	5-14-41	144	98/68	66	—26	5.4	6950	92	1	0	68	27	4	0	0	No casts
L.M.	1.0	2-1-40	125	120/80	72		4.01	7500	84						0	0	
		4-23-41	131	108/60	60	— 6	3.74	8350	80 B_1		0	57	40	2	0	0	No casts
F.B.	1.0	10-14-39	174	132/80	72		4.25		84						0	0	No casts
		5-7-41	165	128/76	56	—29	4.10		80	3	0	53	40	4	0	0	No casts

coronary attacks; to a patient with chronic cardio-vascular disease and chronic myocardial disease. Complete eunuchs, women in good general physical health except for amenorrhea or dysmenorrhea, women with debilitating arthritis have been treated. Youngsters of fourteen and women in the sixth decade have taken Stilbestrol. It can be reiterated that any person who needs estrogenic hormone therapy can be given Stilbestrol.

We here report the follow-up findings of a series of ten unselected women who received Stilbestrol constantly for six months to two years. From the clinical point of view, it was difficult to decide as to what tests might be done to detect any toxic results of medication. Basal metabolism, red and white blood counts, hemoglobin determination, blood differential, microscopic urine examination and blood pressure are noted before, during and after this duration of Stilbestrol therapy.

CONCLUSIONS

1. Stilbestrol is an active estrogenic drug.

2. Stilbestrol is orally effective.

3. A series of ten women who received continuous Stilbestrol from six months to two years is reported. No gross clinical evidence of toxicity was noted.

4. The effective dose of Stilbestrol is approximately one to two milligrams *or less* daily.

5. With such dosage, undesirable side effects were noted rarely.

4500 Olive St.

The Stilbestrol used in this study was supplied by Dr. D. C. Hines of the Eli Lilly Company and Dr. J. A. Morrell of E. R. Squibb and Sons.

Public health takes on a new urgency. Heretofore we have sought health primarily for its value to the individual. Now we must attain it for the nation's security. Surg. Gen. Thomas Parran. Jour. of Amer. Med. Assn., Mar. 28, 1942.

Right now is the moment to stand by the men who make the guns in an all-out fight to eradicate this leading saboteur of Victory — tuberculosis. Kendall Emerson, M.D.

AVULSION FRACTURE OF TIBIAL TUBERCLE

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CHICAGO

Avulsion fracture of the tibial tubercle is moderately uncommon and is a clinical entity not to be confused with Schlatter's sprain or Osgood-Schlatter's disease.

Goldman[2] in 1930 summarized Speed's[6] description of this injury and reported one case of his own which healed by fibrous union. Overton[5] in 1937 reviewed the literature and added one more making a total of eight reported cases. Since that time, Cattaneo[1], Morganti[4] and Keyser[3] have each recorded the condition.

CASE REPORT

On April 7, 1941 at about 2:00 P.M., a white boy, age 15 years, was practicing for the high jump. Upon landing, he felt pain in the region of the R. knee and was unable to extend the leg. This was followed shortly thereafter by swelling in the area about the patella.

When seen, about 4 hours after the accident, the patient had placed the leg in a position of about 30 degrees of flexion. Flexion but not extension was possible. He complained of no pain and there was only slight tenderness on palpation. There was a large fluctuant swelling about the knee joint. The patella was freely movable upward and laterally but could not be brought below its normal position. A mass could be felt below and moving with it. A Roentgenogram showed a complete comminuted fracture of the



Figure 1. Appearance on April 7, 1941 immediately after accident.

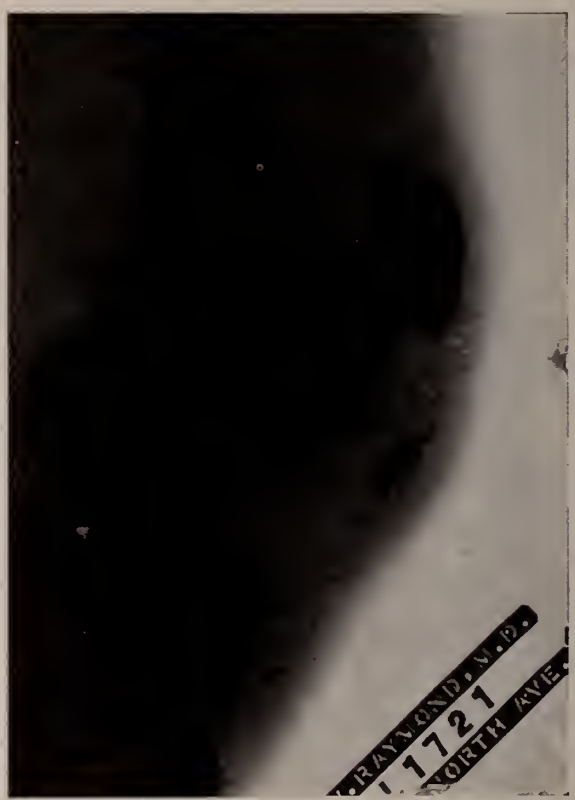


Figure 2. Appearance on October 13, 1941 six months after operation.

The following case is somewhat unusual in that while the patient was only fifteen years of age, ossification was complete, the true fracture usually occurring in middle aged and elderly individuals. It is always due to trauma which may be direct or result from a violent contraction of the quadriceps. The proximal fragment is then carried upward with the patella and requires open operation for reposition.

tibial tubercle with displacement upward of the fragments. Pain at this time was slight.

Operation. — At 6:00 P.M. under spinal anesthesia (15 mg. of tetracaine) an incision was made over the site of the tibial tubercle and a large clot was removed. The patellar ligament was brought down into the wound and was found to have a six cm. strip of an-

terior tibial periosteum attached. The incision was extended downward and the periosteal strip and patellar tendon were attached to their original sites by fine silk. The skin and subcutaneous fascia were closed and a posterior moulded cast applied.

Passive motion was instituted in two weeks, active motion in four and the patient was allowed to walk in six weeks. Functional recovery has been complete.

COMMENT

This type of fracture is rare, constituting only a very small per cent of all fractures of the body. It is about equally due to muscular exertion or direct trauma. Recovery is usually complete but can be achieved only by open operation.

6024 W. North Avenue.

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TRYPARSAMIDE THERAPY AND IMPAIRMENT OF THE OPTIC NERVE

Hans M. Buley, M.D.
AND
Edward C. Albers, M.D., M.S. (Ophth.)
CHAMPAIGN

Tryparsamide is distinguished from the other remedies commonly used in the treatment of syphilis (1) by the exceptional ease with which it passes through the barrier between the blood and spinal fluid, and its apparent effectiveness in neurosyphilis; and (2) by its amazingly low general toxicity as compared with that of other arsenicals. These characteristics of tryparsamide have insured for it an important place among the remedies for neurosyphilis.

In many leading European countries where syphilis therapy is controlled and often paid for by state organizations, numerous syphilologists are inclined, in cases of neuro-syphilis, to rely upon early fever therapy in combination with a short preparatory course of the arsenicals, the heavy metals and the iodides. This therapeutic attitude is justified by economical as well as prognostic viewpoints. The institutions interested in the patient's rapid recovery assume that an early bout of fever therapy is the most radical treatment, and therefore offers the best prognosis for prompt and lasting recovery. Economic necessity supersedes the consideration that improvement from intensive treatment with less drastic remedies is possible, that fever therapy carries with it certain dangers and is most strenuous and unpleasant for the patient.

In this country, where state economy does not influence medical decisions and where the financial burden of the treatment is carried by the patient or his family, fever therapy should be used only when there are definite medical indications. The Cooperative Clinical Group, therefore, recommends standard treatment or, if necessary, individualized methods of injection therapy in neurosyphilis. Fever therapy (especially malarial or artificial fever therapy) is advised only if these methods, used for a reasonable time, should fail to give the expected result and if the patient's general condition permits the strenuous procedure of induced fever therapy.

In addition, one must remember that fever therapy may lead to insurmountable expenses for the patient, who may already have spent a great deal of money for antisyphilitic treatment and may, even after the fever, be required to receive more injection therapy. It is easier, on the whole, for the patient to carry the divided costs of long-continued injection therapy, especially if he can continue his usual employment, which fever therapy may force him to give up. Furthermore, in small communities other difficulties of various kinds are encountered at the initiation of fever treatment. The patient's fear that society might learn of the nature of his illness and his reputation be harmed has to be respected. Fever machines are usually not available, and the patient dislikes being treated far away from home and family. Malaria therapy, though feasible in any well-conducted hospital, requires special nursing and detailed experience by the responsible physician. Typhoid and other non-specific methods of artificial fever therapy

From the Departments of Dermatology and Ophthalmolgy of the Christie Clinic.

are only a substitute, less effective than and as inconvenient for the patient as the better methods mentioned.

All these considerations together induce most of the patients, especially those suffering from asymptomatic neurosyphilis with positive spinal fluid, to prefer tryparsamide treatment, which can be carried out inconspicuously in the physician's office and often gives as good a result as that produced by malaria therapy. If tryparsamide should prove to be ineffective, the patient still has the possibility of subsequent inoculation with malaria.

On the other hand, the ease with which tryparsamide may be administered has often led to its indiscriminate use. Not only is it given wrongly during early syphilis, but its most serious disadvantage, the danger of optic nerve atrophy is neglected and irreparable damage is done to the patient. It is our purpose, therefore, to emphasize this danger and to show how it can be avoided.

Tryparsamide, a pentavalent arsenical chemically related to atoxyl, is a white crystalline, odorless powder which is easily soluble in distilled water. Its arsenic content varies between 25.1% and 25.5%. Aside from its pharmacologic characteristics mentioned above, namely its low toxicity and its high rate of penetration into the central nervous system, the drug possesses a distinct tonic and resistance-building action which is of great importance for the neurosyphilitic patient. Its elimination is very rapid, and consequently its accumulation in the body is negligible. According to Young and Muehlberger[1], 88-95% of the drug leaves the body during the first 24 hours after administration. Its spirocheticidal action is low in comparison with that of other antisyphilitic drugs.

Large doses of tryparsamide are tolerated, and even required, in the treatment of neurosyphilis. It is customarily given intravenously, once a week, in doses of 1-3 grams dissolved in 5-10 cc. of distilled water. Although intramuscular or subcutaneous injections are relatively painless, the intravenous route is preferred. The injections, which may be given along with injections of heavy metals or administration of iodides, should be continued over a long period of time. A series of 70 or more may be given, either continuously or alternately with courses of bismuth or mercury.

Systemic reactions to tryparsamide are uncommon, although it seems that recently an increasing number of the various reactions have been reported. Stokes[2] emphasizes that therapeutic shock effects may occur during the first 6-10 injections, and maintains that a preparatory treatment with one of the heavy metals or arsphenamines would reduce this type of complication, as well as that of eye injury.

Tryparsamide is indicated, with few exceptions, in all forms of neurosyphilis in which the standard methods of antisyphilitic treatment have proved ineffective. It is necessary to emphasize that the diagnosis be made after due valuation of the findings in the spinal fluid. We have observed that some patients are treated with tryparsamide at the end of a standard treatment as a kind of neurosyphilis "prophylaxis," although the spinal fluid has not been examined at any time during the course of the antisyphilitic therapy. The physician's motive in such cases is to give the patient the "benefit" of the tryparsamide without the unpleasant experience of a spinal puncture. This therapeutic approach, however, is to be condemned, since it endangers the patient unnecessarily and leaves unanswered the question of whether the patient's central nervous system is at all involved. No tryparsamide therapy should be started unless the spinal fluid, obtained either by spinal or cisternal puncture, has been tested. The drug is especially useful, as Moore[3] has pointed out, if neurosyphilis is present in a patient with cardiovascular syphilis. In such a case, the patient with cardiovascular changes will avoid the dangers of fever therapy and yet receive treatment powerful enough to control the alterations in the central nervous system as well as in the cardiovascular apparatus.

The use of tryparsamide is contra-indicated in the early infectious period of syphilis and in all forms of late syphilis without central nervous system involvement. It should not be given an unnecessarily long trial in a case of rapidly advancing paresis when there are no contraindications to fever therapy, or in other cases where the patient does not properly respond to the treatment clinically or serologically after the drug has been administered in adequate doses for a period of up to one year. Intolerance to the

drug and hepatic insufficiency, of course, prohibit the use of tryparsamide. Pregnancy is a contra-indication for it, since the effect of the drug on the optic nerves of the fetus is unknown. (Stokes[2]) Finally, it is usually contra-indicated when the optic nerve is involved by the disease and if eye symptoms develop following injections of the drug.

Mayer[4] has used tryparsamide in the presence of syphilitic optic atrophy, but the risk of further optic injury overshadows the potential benefit of this procedure. In addition, other therapeutic procedures (malaria, intraspinal arsphenamine, artificial fever) have often proved to be more effective in this condition. Extreme caution must be exercised in patients with tabes dorsalis, even those with normal eyes, because it is in this form of neurosyphilis that the ocular reactions to tryparsamide are most frequent.

Almost all toxic reactions due to arsenical therapy, such as dermatitis, jaundice, nitroid, crisis, etc., have occasionally been observed during the administration of tryparsamide.[5, 6, 7, 8, 9, 10] However, the most dreaded complication of this compound is sudden impairment of vision. This untoward reaction usually occurs from 24-48 hours following one of the first 10 injections in 3 or 4% of the patients with normal eyes. The symptoms may be classified as subjective and objective, the latter, in all probability, being an indication of a more advanced state of the toxic action of the drug on the optic nerve.

The subjective ocular symptoms of tryparsamide are often spectacular. The patient may complain of dazzling, heat waves, light flashes, spots, and many other sensations before his eyes. There may be a marked tendency to collide with objects, which makes the patient apprehensive of losing his eyesight. Muncy[11] has pointed out that some patients may undergo mental changes of an exciting nature, which may be explained as a psychic reaction to the subjective ocular phenomenon or as due to some general toxic action of the drug on the central nervous system. Hallucinations, delusions of persecution, and even acute insanity may complicate the picture, showing that the eye manifestations are only a part of a general reaction.

The most frequent objective ocular reaction is a contraction of the peripheral visual fields with sparing of the central fields. There is usually more narrowing above, below, and nasally, with relative sparing of the temporal field and leaving the blind spots and central vision normal. This type of field defect has been called the palpebral slit field of tryparsamide. The color fields may be contracted but usually are less affected than the form fields. The contraction for the red field may be greater than that for blue. Only occasionally are central and ceco-central scotomata observed. As the narrowing of the visual fields progresses toward the center of fixation, the light sensitivity of the central retina may also be reduced. Occasionally the progress may be so rapid that the patient becomes totally blind after one intravenous injection of tryparsamide. In spite of the marked changes in the fields, light sense, etc., one seldom observes alterations in the retina or optic nerve on direct ophthalmoscopic examination. Therefore, in the prevention of visual impairment it is important that one must not depend on the ophthalmoscopic examination but should make accurate visual field examinations by an objective method.

The pathologic process in ambyopia caused by tryparsamide is not well understood. Lillie[12] thought the effect to be perineuritis of the optic nerve with diffuse degeneration and secondary hypertrophy of the interstitial glial tissue (gliosis), most marked in the periphery of the nerve and slightly around the blood vessels in the substance of the nerve. Leinfelder[13] studied the optic nerves and retina of a patient nine days after the intravenous injection of one gram of tryparsamide and seven days after the onset of blindness. He observed acute degeneration of the retinal ganglion cells of the innermost portion of the inner nuclear layer. Evidence of acute primary degeneration of the optic nerve and tracts was not present, and there was no evidence of the general pathologic changes seen in arsenic poisoning. Verhoeff[14] remarked in his discussion of the same case that the retinal ganglion cell degeneration could be secondary to the degeneration of the fibres of the optic nerve, even though such alterations were not seen histologically.

The visual changes indicate that the drug does not affect the entire cross-section of the optic

nerve at one time, but only the distal peripheral portion. The early impairment occurs apparently in the peripheral portion of the nerve where the macular fibres are situated near its center, and the fact that pallor of the disc seldom occurs supports this view. The reaction is probably a direct toxic effect of tryparsamide on the nerve fibres, and it is quite unlikely that it is a reactivation of a syphilitic process in the glia as Lillie[12] thought.

It is only very occasionally that the differential diagnosis between syphilitic optic atrophy and secondary optic atrophy resulting from tryparsamide therapy causes difficulty. The differential diagnosis can be easily made from the fundus and field changes alone, but a history of previous tryparsamide therapy would be of great practical value. The field changes of syphilitic optic atrophy do not show the sparing of the temporal field, the contraction is more concentric, and there is often a central or ceco-central scotoma with or without contraction of the peripheral fields. Occasionally the peripheral fields may be narrowed without scotomata or there may be nerve bundle defects. In some cases of syphilitic optic nerve atrophy, the peripheral fields are contracted down to five degrees or less with normal central vision.

An important fact is that in syphilitic optic nerve atrophy as well as in atrophy due to tryparsamide field defects may occur long before any changes in the nerve head and vision can be seen clinically. The late atrophy from tryparsamide is not distinguishable from primary syphilitic optic atrophy when total blindness has occurred.

The following case I observed in the Christie Clinic illustrates how the loss of vision may rapidly occur following a tryparsamide injection and how the subjective symptoms long precede the findings of optic nerve atrophy in the fundus.

CASE I

(Abstract of history) A 58-year-old machinist with a positive history of syphilis suffered from tabes dorsalis recognized by the history of lightning pains, tabic crisis, and the physical evidence of absent patellar Achilles tendon reflexes, Head's zones, positive Romberg sign, and Argyll-Robertson pupils. The blood serologic reactions and the spinal fluid examination were negative.

The patient was referred to the hospital, and tryparsamide, 1 gm., was given without previously examining the eyes. Two days after the injection an ophthalmologic examination was performed with the following report: "Distant vision normal. Patient reads J 0.50 print easily with plus 3.00 D lens. Argyll-Robertson pupils. Fields are roughly normal in the eight principal meridians with a 2 mm. white test object at about 300 cm. distance. Discs essentially normal. 3 Minimal sclerosis of the retinal arterioles."

A second injection of 1 gm. tryparsamide was given a week after the first. At that time the clinician reported no symptoms referable to the eyes. Two days later the patient's vision began to fail, and four days after the injection he was totally blind. A therapeutic regime of intravenous typhoid injection and forced fluids was of no avail. The patient did not regain his vision. Both optic nerves showed complete atrophy when examined six months later.

To avoid injury to the optic nerves from tryparsamide, the vision and perimetric fields should be regularly recorded before the beginning of the treatment, so that any change that may occur can be quickly detected on subsequent examinations. Since the greatest danger of a reaction is during the first ten injections, careful studies of the eyes by a competent ophthalmologist should be made before each of these treatments. Patients should be warned to report visual disturbances of any kind immediately. If these are noticed, the eyes should be reexamined at once and the treatment stopped for one month. If no objective alterations in the optic apparatus are observed during this period of time, treatment may be cautiously resumed with tryparsamide. It is permanently discontinued where there is objective evidence of a tryparsamide reaction. In such a situation most cases will fully recover if no further tryparsamide is given. The fact, however, should not lead to therapeutic inactivity, since loss of time may cause serious permanent damage to the retina and optic nerve. Forced drainage of the spinal fluid, foreign protein therapy, vasodilation by the use of electric pads and pilocarpine injections, and magnesium sulphate purges have often helped to assure recovery of the patient's eyesight.

New methods for the prevention and treatment of optic nerve injury due to tryparsamide have been suggested in recent years by the progress in the knowledge of vitamin deficiencies.

Muncy,[11] impressed by the similarity of tryparsamide reactions to toxic amblyopia, used vitamins B_1 and B complex routinely in 50 cases treated with tryparsamide and, in addition, in a number of tryparsamide reactions in the optic tract. He did not see a typical case of optic nerve atrophy among the patients of the first group and was able to restore vision in those cases in which a reaction had already occurred. Most remarkable, however, is the fact that he could resume the use of tryparsamide combined with vitamin B_1 in patients who were suffering from optic nerve impairment due to previous tryparsamide therapy.

The theoretical explanation for the effect of vitamin B is not yet established. Clinical and experimental observations[15, 16] have shown that there are correlations between deficiencies in vitamins A and B and nervous degeneration. Moore and Woods[17], in a critical review of syphilitic optic atrophy in 1940, concluded that "the pathogenesis of tabes and of primary optic atrophy may conceivably depend on a combination of neurosyphilis and dietary deficiency." The same may be said of the interrelationship between optic nerve atrophy from tryparsamide treatment and avitaminosis. Since many patients with a tryparsamide reaction have lived on a well-balanced diet, where shall one look for the cause of the vitamin deficiency? Perhaps the diet did not contain enough vitamins many years back, and the damage done at that time predisposed the patient to the tryparsamide reaction. Perhaps the body, due to some third functional disturbance, is not capable of digesting and absorbing the full amount of vitamins furnished with the food. The future will probably yield the answers to these questions.

One of our patients with imminent tryparsamide optic nerve atrophy was treated with vitamins B_1 and B complex, and his vision was restored. The abstract of his history is as follows:

CASE II

A white man, aged 58, complained of loss of weight, general fatigue, and weakness of the bladder. There was no past history of syphilis or other diseases. A diagnosis of tabes dorsalis was established on the basis of Argyll-Robertson pupils, absent patellar reflexes, absent Achilles tendon reflexes, and a positive Romberg sign. The Wasserman reaction was four plus; the Kahn was positive; but the spinal fluid examination was negative. Urologic examination showed "cord bladder and cystitis."

Ophthalmologic examination revealed "vision 20/20 (with correction) each eye, reads J 0.50 print easily; fields normal; pupils round, small, equal, react to accommodation but not to light; fundi normal . . . "

In addition to care of the uro-genital tract, antisyphilitic treatment was initiated with Bismuth injections. Intercurrent influenza caused an aggravation of the patient's complaints. Tryparsamide, 1 gm., was injected after re-examination of eyes showed normal perimetric fields and normal vision. A week later, since the opthalmologic findings were normal, a second tryparsamide injection of 1 gm. was given.

Six days after the second tryparsamide the patient returned to the clinic complaining of foggy vision, light flashes, and spots before his eyes. He collided with objects and hit the sides of doors, bruising his shoulders. His vision was 20/200 in each eye and he could not read. Visual field study revealed a small relative central scotoma and typical palpebral slit fields. The diagnosis was visual impairment due to tryparsamide. Under daily regime of thiamine chloride, 10 mg. intramuscularly, 3 capsules of a proprietary vitamin B complex preparation by mouth, and injections of 1 gm. sodium thiosulfate intravenously, the vision improved to 20/20 for distance and 14/14 for near with correction within four days. The peripheral fields widened almost to normal in four weeks.

Though substantial proof is lacking that this patient's vision would not have improved without the vitamin B_1 and B complex therapy, this observation seems to support Muncy's[11] extended experience.

In summary, tryparsamide, because of its unique pharmacologic action, is a useful drug for late neurosyphilis if indications and contraindications are carefully observed. The danger of optic nerve atrophy loses a great deal of its seriousness: 1. if the patient is properly prepared for the treatment; 2. if the patient's visual fields are thoroughly and regularly checked by a competent ophthalmologist; and 3. if the patient is protected against visual damage by the simultaneous administration of adequate amounts of vitamins B_1 and B complex with the tryparsamide.

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ADDRESS OF GOVERNOR DWIGHT H. GREEN

At Presidents' Dinner of Illinois State Medical Society, Abraham Lincoln Hotel, Springfield, Wednesday Evening, May 20.

The opportunity to address you this evening affords me a double pleasure, in that you enable me not only to enjoy your social hospitality, but even more important, to express appreciation of the invaluable services your profession is rendering throughout the state and the nation.

You have just completed three days of intensive discussions involving your profession and the impact upon it of the war into which we were thrust by one of the most treacherous deeds in history. Your deliberations have been keyed to the demands of the emergency and the one thought uppermost in the minds of each of us —victory.

We are confronted with a gigantic task—but we, as Americans, have been accustomed to facing such tasks and never have we flinched from the determination that we must win—and we will win. The courage within our hearts has been strengthened to the degree where we have determined that nothing shall stop us. We have thrown our all into this tremendous effort, and day by day we are adding the power which eventually will tip the scales on the side of right, forever destroying the totalitarian theory of might.

We dare not permit those who think only in terms of their own aggrandizement to destroy the values of personal liberty and freedom of opportunity for which we in America have stood for almost a hundred and sixty-six years. We dare not contenance upon the face of the earth the dictatorships which destroy a whole people in their savage lust for power.

America has ever stood—and will ever stand —for the rights of citizens to enjoy the fruits of their labors, as free men, not as slaves to a doctrine forged in the fires of human sufferings.

We, in Illinois, not only have sent more than a hundred and fifty thousand men into the nation's armed forces, but we are fighting relentlessly on the home front. That battle is being waged in every factory, on every farm, in every home, in every church and in every school. It is being waged in the office of every physician, and it is most heartening to know that you, engaged in one of the most Godlike professions known to man, are contributing your every possible aid to the all-out efforts of war.

We, in Illinois, were galvanized into a unity of action on that fateful Sunday of December 7 when the forces of black treachery struck at Pearl Harbor. We did not wait for the call to arms, nor were we unprepared for the demands which we knew would be made upon us. The Illinois State Council of Defense had been organized months before and was ready for action, and departments of state government were mobilized and they put all use but war into the background.

The State Council of Defense shares with me the knowledge of the grave responsibility which rests upon the shoulders of the medical profession. I want to express our gratitude—and I know that I speak for every person in Illinois —and I want to say that every task undertaken by you has been magnificently accomplished.

Through your wholehearted co-operation, we have established nineteen counties as defense zones, and in three counties, well staffed health departments already have been set up for the

duration of the war. Organization of others will follow and their creation will maintain the health and sanitation necessary to enable war workers to pour forth a continuous stream of munitions for the men who fight our battles on the world's far flung fighting fronts.

With your invaluable assistance, emergency water corps have been formed, and today more than 600 communities in Illinois are a part of that vital organization. Through this great grouping of communities, the State can utilize, in the shortest possible time and in the most efficient manner, every water resource in the state. Under this arrangement, we are prepared for quick action in the event of damage in any emergency.

Through the medical profession and the State Department of Public Health and the University of Illinois, courses of instruction have been launched for sanitation wardens. More than 400 persons have been taught the principles of sanitation in emergencies, and we will continue this work until the entire states has been made conscious of all possible demands.

As Governor of the state, I am particularly pleased to point out—and I am sure my pride is pardonable—our program for the rehabilitation of rejected military selectees.

In this work the medical men of many communities, our public health and welfare departments and selective service officials are rendering a service not only unique in our history, but as vital and important to our manpower as rehabilitation of men whose lives have been damaged by actual combat service.

The state's vast hospital facilities have been made available to these co-operating agencies so that those men rejected for correctible physical defects can avail themselves of the opportunity for rehabilitation. It is a service which in war time is most essential to the all-out war effort, it also is a service, which, upon the victorious conclusion of this war, will provide men fit for the task of reconstruction and will restore our manpower to its full ability to achieve.

The achievements of the medical profession of Illinois in co-operation with Department of Public Health and through its own channels, are almost countless. We all recognize the peace time contributions to our health and happiness made by the men of medicine, but in times of war many of these contributions assume added significance.

Illinois has long been a leader in the venereal disease control program and the tremendous value of such work now cannot be too strongly emphasized. To you who have assisted in the establishment of control centers, and to you who have enabled us to tear the mask from the insidious and previously unmentionable subject, must go the everlasting thanks of a grateful people.

Illinois, ranking among the three highest States in the nation in industrial production for peace and for war, has need of industrial hygiene so that we can keep our workmen free from disease and from other influences leading to the destruction of health. To this you have given your time and knowledge, so that we rank high in the freedom from those influences which would detract from our gigantic production tasks. Yes, the physicians and surgeons of Illinois march tirelessly shoulder to shoulder with our industrial workers, our farmers, our labor groups, and our armed forces in this fight for victory.

I would fail in my duty as Governor unless I express the state's pride in the many physicians and surgeons who surrendered their practices when they heard the call to the colors. Today they are rendering equally brave service in our country's hour of need with the men who man our guns, ships, tanks and planes.

Your profession has caught the spirit of war, and you are in the front rank of those of us who feel that we must have a singing, shouting, flag waving war—a war of attack—if we are to emerge victorious. And we will be victorious.

Yes, we will win this war—this contest between government of the people, by the people and for the people, against the governments of oppression and intolerance. The way to victory may be long and difficult, but we in America have never lost a war, and that priceless tradition will inspire us to any sacrifice, to any endurance.

We shall emerge a greater America—more powerful, unchallenged, untrammeled and free—and with even greater consciousness than ever before that freedom of thought, of religious worship, of speech and of race—that these freedoms form the foundation of our American way of life.

THE NEED OF UNIFORM STANDARDS OF MEDICAL LICENSURE IS URGENT

Journal Says Results Of State Licensing Examinations In 1941 Are Striking Evidence Of Lack Of Uniformity

Immediate steps should be undertaken for the establishment of uniform standards of licensure of physicians, *The Journal of the American Medical Association* declares in its May 9 issue, pointing out that war conditions emphasize the great need for such uniformity. *The Journal* says:

"The results of the state licensing examinations published in this issue of *The Journal* are striking evidence of the lack of uniformity of standards of licensure among the various states. Seven states reported not one failure in their 1941 licensing examinations; indeed, they had not had a falure in the past five years. Twelve additional states have reported failures of less than 1 per cent during the same period. Other states, notably New York, have each year reported a high percentage of failures.

"In New York 21.8 per cent of the graduates of the New York State medical colleges who tried the New York State licensing examinations failed, while 39.4 per cent of the graduates of other approved medical colleges in the United States who tried these same examinations failed. Of the 145 graduates of New York State medical colleges who tried licensing examinations in other states, four, or 2.8 per cent, failed.

"The lack of uniformity of results in some states is made more obvious by the fact that a candidate is passed if he receives an average of 75 per cent and is not below 50 per cent in any subject. Furthermore, in case of failure in not more than two subjects the applicant may be entitled to another examination in the subjects failed and is considered conditioned and is not reported as a failure.

"Paradoxically, New York, which reported the highest percentage of failures among the graduates of approved medical colleges on its own examinations, issued a greater number of licenses on the basis of credentials without examination than did any other state.

"In spite of this lack of uniformity, the fact is striking that the graduates of the foreign medical schools and the unapproved schools in the United States showed the highest percentage of failures, 59.6 and 46.0 respectively. Six states licensed graduates of unapproved schools during 1941. Four states granted unlimited licenses to practice medicine to graduates of osteopathic schools.

"The best interests of the public and of the medical profession seem to demand serious thought right now on the establishment of uniform standards of licensure. These not only would facilitate the migration of qualified physicians from one state to another but would offer to the public greater assurance of the training and competence of practicing physicians. War conditions, involving as they do the migration of great masses of the population including physicians, emphasize the great need for such uniformity.

"Is it unreasonable to hope that all states will sometime be willing to maintain standards high enough to make such uniformity possible?"

$1.00 *Spent to Save* $20.00. After the New York State Insurance Fund had paid out more than $900,000 for medical and nursing care and compensation for tuberculosis among employees of the Department of Mental Hygiene, the legislature appropriated $45,000 for the control of the disease in the state mental hospitals. Since 1935 120 cases of tuberculosis have been declared compensable by the State Insurance Fund. John K. Deegan, M.D. et al. Amer. Jour. of Pub. Health, Apr. 1942.

Let us consider the attitude of labor toward the control of tuberculosis in industry. In the first place, industrial workers know all too little about tuberculosis. They need education and plenty of it. A pool would probably show that a majority of them still believe the disease is hereditary, that it is a disgrace to the family and that once it is contracted, the chance of recovery is very small. They buy Christmas Seals and read that tuberculosis is being wiped out through their help. Probably very few understand that more workers die of tuberculosis during the active working life, 18 to 45 years, than die of any other disease. It exacts its huge toll in the prime of life when productive capacity is at its height and when resistance to disease is, or should be, also at its height. Between the perils of childhood and the dangers of old age, tuberculosis sneaks in and snatches more victims than any other disease. Mathew Woll. Pennsylvania's Health, Feb., 1942.

TREATMENT OF VARICOSE VEINS SHOULD BE INSTITUTED EARLY

It Will Lessen Discomfort And Better Enable Patient To Carry On His Required Duties, Physician Says In Article In Hygeia

The earlier treatment for varicose (unnaturally swollen) veins is instituted the less discomfort a patient must endure and the more able he will be to carry on his required duties, Bernard Behrend, M.D., Philadelphia, points out in *Hygeia, The Health Magazine.* "It is a far better policy," he advises, "to obtain early advice and prevent the addition of more varicosities than to wait until the entire leg is studded with varicose veins."

The causes of varicose veins are numerous, Dr. Behrend explains. "Obesity, whether caused by an endocrine or dietary disturbance, is prevalent among patients suffering from varicose veins. Satisfactory results from treatment in this type of case can only be assured if measures to institute weight reduction are likewise prescribed. If no attempt is made to overcome the factor of obesity, recurrence of varicosity is likely.

"Phlebitis, or inflammation of a vein, whether superficial or deep in the leg, has been noted as a cause of varicosities. Often a vein will reopen after phlebitis has subsided, but if it should become permanently closed other veins must function in its place, and a compensatory dilatation of surrounding veins may occur. Thus it is important to determine in a patient with varicose veins whether or not the deep veins are closed, for there is danger of causing a permanently swollen leg if active treatment is undertaken in the presence of stoppage of the deep venous circulation.

"Occupation is undoubtedly one of the prime factors contributing to varicose veins in patients who must stand or walk at their work. . . . A definite number of such men and women give evidence of varicose vein formation after a period of time. . . .

"The number of varicosities caused by tight garters in both men and women patients is surprising. In warm weather, some patients' legs have a tendency to swell, and a tight garter around the lower leg or thigh restricts the venous return of blood. People who must stand at their employment should not wear tight, constricting circular garters, and a patient who is undergoing treatment for varicose veins should never wear circular garters.

"During pregnancy, many women suffer from varicosities which cause considerable pain. As a rule, these varicose veins are caused by increased weight, pelvic congestion and pressure of the enlarged uterus (womb) when the veins return the blood from the legs. Most varicosities disappear some weeks after delivery, but they may recur if the patient again becomes pregnant. After several pregnancies the varicosities may persist until proper treatment has been started to eradicate them."

For the pregnant patient with varicose veins Dr. Behrend suggests that an elastic bandage or stocking be applied from the instep to the upper thigh. If the patient has severe varicosities in the early months of pregnancy, careful injection of medication into the veins can be tried. The patient should rest with the legs elevated on a pillow to help the venous circulation and decrease the swelling in the legs.

Varicose veins, the physician says, appear to affect whole families. In considering this, he suggests that it is well to determine whether in all generations affected there were many pregnancies and whether the men in the family suffered from varicose veins because long hours of standing were required in their occupations. "In such situations," he advises, "the proper procedure is to visit the physician to determine what can be done to prevent a repetition of the same disorder.

"Varicose veins frequently are first evident when a patient begins to walk about after a long illness. This is due to the fact that the patient's leg muscles are weak, the vein walls have lost their elasticity and the skin is relaxed. The change to standing position under those conditions with the return of the pressure in the veins has caused the blood vessels to dilate. Unless measuers to counteract the change of posture are adopted, these veins will develop into true varicosities. Before such a patient is allowed to leave his bed an elastic stocking or bandage should be placed on both legs from the foot to the knee. Essentially this will give the added support that is necessary until the legs have once again regained their former strength."

PRIMARY OVARIAN CANCER

(J. E. Hall, Brooklyn, in *The Brooklyn Hosp. Jr.,* April)

Primary ovarian cancer is one of the most fatal forms — mortality 90%. In view of the fact that over 80% of the patients were women over 40 years of age and because the disease is practically symptomless until it is well advanced, every women over 40 should have a pelvic examination every six months. This procedure probably would enable us to discover a much higher percentage of these tumors before they become so far advanced. Furthermore, other early lesions of the genital tract would be found.

The procedure of choice, as soon as diagnosis is made, would seem to complete removal of the pelvic organs, then extensive postoperative roentgen therapy. Under such a plan of treatment in early ovarian cancer, before the onset of pain and abdominal enlargement — which are late symptoms in the disease — the survival rate would be greatly increased.

Automobile accidents on the streets create a great stir, but tuberculosis causes three times as many deaths. R. T. Westman, M.D., Health Off., Kansas City, Kan.

Clinicopathologic Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY

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CASE 1 — BILATERAL WILMS' TUMOR

Dr. E. T. Leonard: This man of 59 years has an essentially negative history prior to March, 1940. At this time he suffered an attack of severe upper abdominal pain, without vomiting or jaundice. This continued for four days, and then subsided. Subsequently over a period of eleven months he had several similar attacks of pain. These were less severe, and he was able to work at all times. He was first seen on February 18, 1941, complaining of dyspnea, fatigue on exertion, and pain in the right flank and hypochondrium.

Physical Examination: Temperature, pulse, and respiration normal. Large readily palpable mass was found filling the upper two-thirds of the right abdomen. The liver margin was distinct from this mass, and extended four fingers below the costal brim. There was some dullness in the base of the right chest, otherwise the findings were essentially negative.

Laboratory Examination: Urine: Many R. B. C.'s and pus cells; Albumin + Daily output—1,700 cc.

Blood: R. B. C. 3,900,000; Hg. 12.2 gms.; W. B. C. 8,800; Eos. 2; Stab. 12; Seg. 72; Lymph. 10; Mono. 4. Urea Nitrogen 19 mgm. per 100 cc. Wasserman and Kahn negative.

X-ray: Intravenous and retrograde pyelography. (Dr. Theo. Lang and W. Seifert) Large tumor of right abdomen. Bizarre and distorted right kidney pelvis. Kidney appears displaced and rotated by tumor. Left kidney normal. Diagnosis: Huge retro-peritoneal tumor, right side. (Apparently extra-renal).

Surgical Exploration: 1. Aspiration by needle. Obtained 700 cc. sterile reddish yellow fluid. Some R. B. C.; no characteristic odor; high protein content.

2. Exposure of mass revealed inoperability. Origin and type of tumor still not demonstrated. Considerable necrosis noted. Biopsy diagnosis: Malignant neoplasm. Possible carcinoma of renal origin.

Patient expired one month after admission to hospital.

Autopsy: (Dr. A. R. K. Matthews) The principle findings of interest are in the abdomen and thorax. In the abdomen, the liver presented itself as an extremely large organ, extending all the way to the left flank. Its weight was 3,800 gms. Its entire right lobe was replaced by metastatic tumor growth. There were similar nodular tumor deposits throughout the remainder of the organ. Several stones were present in the gall bladder. The omentum and mesentery were studded with some nodular tumor deposits. The retro-peritoneal tumor was found as expected. Its weight was 3,070 gm. As you see, it appears to arise from, and replace the upper and central portion of the right kidney. The lower pole of this kidney remains intact, also the pelvis and ureter. The tumor has a fairly regular contour, is moderately firm, and it was densely adherent to the surrounding tissues. There is much necrosis, and the tumor

tissue has a grayish brown color. The left kidney, as shown here, has a similar tumor at the lower pole. This lies anteriorly to the rest of the kidney, and there is no distortion of the renal pelvis. This kidney and tumor weighed 630 gm.

In the thorax, 3,100 cc. of thick greenish fluid was found on the right side. The right lung was collapsed, and pocketed to the left of the mid-line behind the heart. Both lungs presented scattered small grayish nodules which have proved to be tumor. The heart presented nothing very remarkable except for two small grayish nodules in the wall of the right ventricle. These project slightly into the ventricular cavity. These also have proven to be tumor deposits. The diaphragm on the right side was extensively invaded by tumor, and presented a thick nodular appearance.

In the cranium no tumor, abscesses, or hemorrhage were found.

Microscopic Examination: These sections are from the primary tumors of the kidneys, and from the metastases of the liver, lungs, and heart wall. A few tumor cells are grouped in a manner suggesting tubules, and some even appear to present glomerular structures. Other areas show more diffuse oval to spindle shaped cells, some of which are fibrillar. These are features of an embryonic mixed growth, and justify the diagnosis of a Wilms' Tumor. There is nothing suggestive of a hypernephroma. The metastases reproduce the same features of histological growth.

DISCUSSION

We have seen here a bilateral Wilms' Tumor in an adult. As you know, this type of neoplasm represents a growth of persistent primitive embryonal kidney structure. It presents a basic structure of mescenchymatous tissue, in which there are gland structures similating tubules, sometimes glomeruli. They are seen most frequently in the first three years of life. I have been able to find only 26 cases reported in adults up to 1939, and this review of the literature shows a marked predominance of unilateral growths.

These tumors grow rapidly, and become very large. Pain and hematuria are usually late. Metastases are most common in the liver and lymphatics. Long surgical survivals are few, local recurrence and metastases being the rule. A few apparently complete recoveries are recorded. Radiation causes regression, but it is doubtful if it will sterilize the growth. Secondary degeneration such as we have in this case is quite common. I regard this as an unusual case, although too far advanced when discovered for any adequate therapeutic measures.

CASE 2 — MALIGNANT CYSTADENOMA OF PANCREAS

Dr. C. A. Cibelius: This patient, age 54, female, was first seen January 14th, 1942. She had been under the care of another physician two months previous, at which time a paracentesis was performed because of abdominal distention. Two quarts of fluid had been removed, and found to be negative for tuberculosis and carcinoma. Since that time the abdominal distention had been increasing. There was no bowel disturbance and no difficulty with urination. Menopause occurred at age of 49, no bleeding since.

Physical Examination: Head, chest, and extremities negative. Abdomen distended; dullness in both flanks; palpable mass in upper left quadrant. Rectal-vaginal examination revealed a firm fixed pelvic floor, and inability to palpate pelvic organs.

Laboratory Examination: Blood: R.B.C. 4,190,000; Hg. 14.2 gm.; W.B.C. 6,400; Stab. 8; Seg. 60; Lymph. 30; Mono. 2.

Urine: Albumin — 1 plus; Acetone — 1 plus; Few pus and R.B.C.'s.

Provisional Diagnosis: Ascites due to:

a). Banti's disease with cirrhosis of the liver.

b). Carcinoma of peritoneum from some primary source in abdomen.

Surgical Exploration: The parietal and visceral peritoneum throughout was found to be studded by small white nodules (2 to 5 mm.). A large nodule in the splenic region, 10 by 15 by 10 cm., was found. This was considered to be the spleen. Two nodular masses were felt on the dome of the liver. These were considered to be metastatic tumor growths. The pelvic organs were not large, but well fixed and firm. 2,000 cc. of fluid was removed, which, on examination, showed protein 1.8%, specific gravity 1.025, sterile culture, negative tuberculosis. A biopsy was obtained from the peritoneum; sections of this will be projected. This shows scattered groups of epithelial cells with a tendency toward glandular arrangement, and

evidence of some secretory activity. From this finding, a diagnosis of carcinomatosis of the peritoneum, probably secondary to a tumor of the gastro-intestinal tract or ovaries, was proposed.

This patient expired February 27th, 1942, about six weeks after admission to the hospital. At this time symptoms of bowel obstruction had developed.

Autopsy: (Dr. A. R. K. Matthews) In this case the interesting pathology is entirely con fined to the abdominal cavity, with the exception that the upper lobe of the right lung shows a well marked pneumonia. In the abdomen, 2,300 cc. straw colored fluid was found. The greater part of the ileum was distended to a point in the terminal portion where a partial obstruction was found due to inclusion in an adherent mass which consisted of the uterus, ovaries, and bladder. The peritoneum had a dull reddish gray appearance, and showed many adhesions. The liver weighed 1,320 gm., and presented two small grayish nodules on the dome, each measuring 2 cm. in diameter. In the region of the pancreas, a large mass, 12 by 10 by 7 cm., was found. This mass had a cystic character. It was attached to the spleen, though quite distinct from that organ. I have it here, and, as you see, it replaces almost the entire pancreas, only a small portion of which remains at the head. The cyst cavities are multiple, and communicate. They contain thick dark yellowish material. The walls are irregular, and have a light grayish gelatinous-like structure. On investigation, both ovaries were found to present cystic tumors, similar in every respect to the tumor of the pancreas. In these you will see and note the similarity of apperance. The ovaries are not markedly enlarged, each being about 5 cm. in diameter.

The stomach did not contribute to the pathology. The kidneys, ureters, adrenal glands, and uterus also did not contribute.

Microscopic Examination: The sections which you see present a definite papillary cystadenoma with marked secretory activity. The secretion is of a gelatinous type. The epithelial calls are tall, and quite uniform, but there is evidence of malignant infiltration. The tumor growth is identical in the ovaries in every respect.

DISCUSSION

This is an interesting case which is also unusual. Cystadenomas of the pancreas are not common. The malignant degeneration with extension to the peritoneum and ovaries is a further interesting feature resembling the Krukenberg tumors which occur secondary to tumor growths of the stomach. While we originally felt that the primary growth in this case might be the ovaries, I feel now that the pancreas is the source of the malignancy.

Question: (Dr. D. H. Wrork) Is there a definite pathological picture for Banti's disease?

Yes, one is recognized and described as regards the spleen. It consists chiefly of a diffuse fibrosis and hypertrophy. Cirrhosis of the liver is supposed to develop subsequently. However, in my experience, Banti's disease, as originally described, is very infrequent; and I believe when these cases are thoroughly sifted out, that the diagnosis will be seldom made.

MINUTE SULFATHIAZOLE CRYSTALS

Minute crystals (microcrystals) of sulathiazole, a derivative of sulfanilamide, prepared by a new procedure, have been found to be more effective aids in treatment of surgical wounds and local infections than the ordinary large sized crystals of the drug, Leslie A. Chambers, Ph. D.; T. N. Harris, M.D.; Francis Schumann, M.D., and L. Kraeer Ferguson, M.D., Philadelphia, report in the May 23 issue of *The Journal of the American Medical Association.*

In certain procedures it is desirable to inject the sulfonamides through fine hypodermic needles, they explain. Usually this is not possible because of the large size and irregular shapes of the crystals. It was found that direct vibration did not reduce the size of the crystals. However, an indirect procedure involving sonic agitation has been developed which reduces the crystal size sufficiently to permit passage through 26 gage needles. By sonic agitation is meant vibration by means of high frequency audible sound waves.

The author says: "The results with the local use of the microsulfathiazole in thirty traumatic wounds and 57 cases of infection have been favorable. It was used in suspension in the abdomens of 19 patients with no untoward results. . . ."

★ BUY WAR BONDS ★

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

A grant-in-aid for a study in research of Rheumatic Fever has been awarded to Dr. Rowine M. Hayes by the Trustees of the Chicago Heart Association Memorial Fund founded in memory of Morris Fishbein, Jr.

This memorial fund was established for the purpose of a study in research in some phase of cardiovascular disease.

Dr. Hayes will do her work at the Children's Memorial Hospital, Chicago, under the direction of Dr. Stanley Gibson.

At the annual meeting of the Illinois Psychiatric Society held on May 9, the following officers were elected for the year 1942-43: President, Francis J. Gerty; Vice-President, Franz Alexander; Secretary-Treasurer, Eugene I. Falstein; Councilor, David B. Rotman; Councilor, Hugh T. Carmichael.

The Chicago Society of Allergy at its last meeting elected the following officers for the coming year: President, Michael Zeller; President-Elect, L. E. Markin; Secretary-Treasurer, Helen C. Hayden.

The doctors of Jersey-Greene County Medical Societies met in Carrollton on May 8th at which time Groves B. Smith, Superintendent of Beverly Farm spoke on "Neurology." His lecture dealt with the neurological conditions most frequently met by the general practitioner.

DEATHS

Edward H. Wolinski, Chicago; Loyola University School of Medicine, 1919. Died of a heart ailment on April 23, 1942, at the age of 48 years.

A. Lee Alderson, Pana; Chicago Medical College, 1913. Died April 27, 1942 as the result of an automobile accident at the age of 54.

Alfred Buck, Palatine; Jenner Medical College, 1914. Died April 29, 1942, following a heart attack.

Walter Burgess, Pana; Marion Simms College of Medicine, 1927. Died suddenly April 26, 1942, at the age of 66.

Emery M. Byers, Genoa; University of Illinois College of Medicine, 1898. Died May 23, 1942 at the age of 69 years.

John DeWitt Byrne, DuQuoin; Kentucky School of Medicine, 1904; member of the American Board of Ophthalmology; member of the faculty at Tulane University. Died April 12, 1942, at the age of 62.

Charles Perry Clarke, Rochelle; Chicago Homeopathic Medical College, 1897. Was a member of the Rochelle American Legion Post and had practiced medicine in Rochelle for 18 years. Died suddenly May 7, 1942 at the age of 70 years.

Clarence Edward Quaife, Galesburg; Louisville and Hospital Medical College, 1908. Practiced medicine in Galesburg about 34 years; member of the Illinois State Medical Society. Died May 2, 1942, at the age of 66.

Charles Sylvester Skaggs, East St. Louis, Barnes Medical College, St. Louis, 1903. Past president of the Illinois State Medical Society and charter member and past president of the East St. Louis Kiwanis Club. Had practiced medicine in East St. Louis for 38 years. Died May 6, 1942 at the age of 63 years.

Orval Addison Suttle, Mt. Vernon; Barnes Medical College, St. Louis, 1909; member of the Illinois State Medical Society. Had practiced medicine in Mt. Vernon for 30 years. Died May 6, 1942 at the age of 70 years.

Frank Breckenridge Earle, La Grange, Ill.; College of Physicians and Surgeons of Chicago, 1885; member of the Illinois State Medical Society; joined

the staff of his alma mater in 1885 with the title curator of museums, in 1888 became lecturer on practice of medicine, in 1889 assistant to the chair of practice, in 1894 lecturer on obstetrics, from 1895 to 1902 professor of obstetrics, from 1901 to 1913 secretary of the college, and from 1903 until September 1914 professor of pediatrics, when he was made professor emeritus; served during World War I; aged 81; died, March 6, in Eustis, Fla., of arteriosclerosis and bilateral pyonephrosis.

Mark Allen Gier, Elgin, Ill.; Jenner Medical College, Chicago, 1909; served during World War I; formerly on the staff of St. Elizabeth Hospital, Chicago; aged 65; died, March 2.

Jerome Harvey Hunter, Chicago; Meharry Medical College, Nashville, Tenn., 1921; aged 53; died, March 21, of pneumococcic meningitis.

Henry George Lampe, Chicago; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1901; was associated with the Veterans Administration, Hines, Ill., from July 1923 to March 1928; formerly local surgeon, health officer and assistant surgeon, Illinois Central System; served during World War I; aged 62; on the staff of the Illinois Central Hospital, where he died, March 5, of coronary thrombosis and hypertensive heart disease.

Axel Thorsten Larson, Chicago; Northwestern University Medical School, Chicago, 1925; member of the Illinois State Medical Society; aged 58; died, March 14, in Tucson, Ariz., of rheumatic heart disease.

Harry Randolph Spickermon, North Henderson, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; aged 68; died in March at St. Mary's Hospital, Galesburg, of pneumonia and emphysema.

DOGS AND TULAREMIA

Evidence that dogs may be susceptible to infection with tularemia (rabbit fever) is presented in *The Journal of the American Medical Association* by L. F. Ey and R. E. Daniels, Columbus, Ohio, who report an instance in which they found the disease occurring in 3 dogs and their master. The dogs recovered, whereas, the owner died. Heretofore it had been considered by many that dogs possessed a natural immunity to the disease.

The owner of the 3 dogs went hunting with them on Nov. 6, 1940. The dogs ran down a rabbit which they killed and the master divided it into three pieces, giving one to each dog. The following day the youngest dog became ill and the other 2 dogs became ill a day or two later. On November 9 the owner of the dogs became quite ill with chills and fever and on November 11 he was hospitalized. Although he received antitularense serum treatment the owner of the animals died on November 16. Blood specimens from each of the 3 dogs were positive for the tularemia organism.

REPORT ILLUSTRATES HAZARDS INVOLVED IN SELF MEDICATION

Physicians Tell Of Two Patients Who Showed Evidence Of Poisoning From Massive Doses Of A Substance With Vitamin D Activity

The hazards of self medication with massive doses of vitamin D, particularly in the summer time, are illustrated in a report in *The Journal of the American Medical Association* for May 16 by Philip A. Tumulty, M.D., and John Eager Howard, M.D., Baltimore, of 2 patients who showed evidence of poisoning from massive doses of irradiated ergosterol, a substance which acquires the properties of vitamin D_2 when subjected to ultraviolet rays. This bears no relationship to the taking of vitamin D by infants for the prevention of rickets.

"During the past five years," the two physicians say, "there have been an increasing number of clinical reports regarding the use of massive doses of vitamin D in the treatment of rickets, tetany, rheumatoid arthritis and various allergic states.

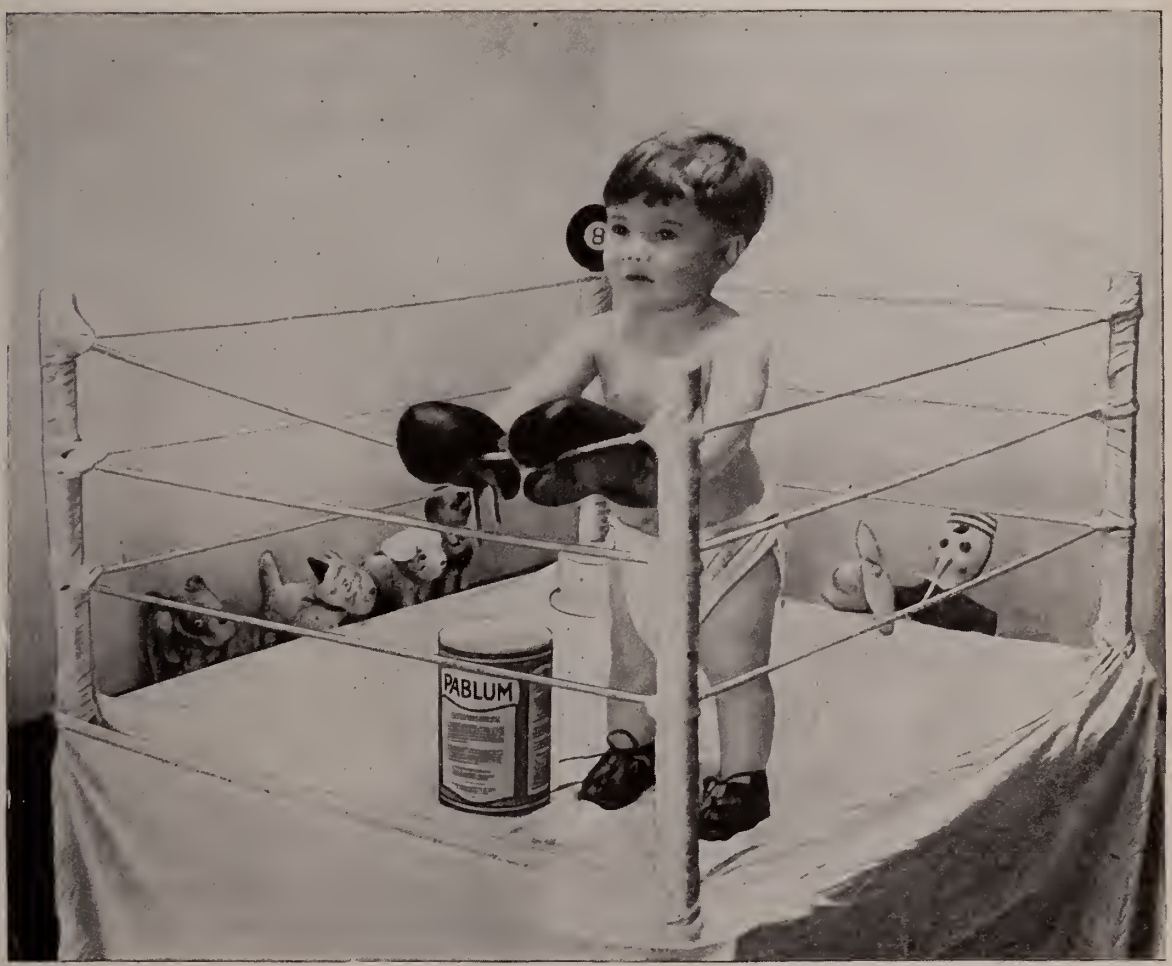
"We shall make no attempt to evaluate the therapeutic (treatment) efficacy of vitamin D or its concentrates in these conditions but shall rather put out a suggestion of caution regarding the possible ill effects that may follow, under certain circumstances at least, the employment of massive doses of the vitamin. . . ."

They tell of 2 young men who, in July 1941, were given massive doses of irradiated ergosterol, presumably as an aid in the reuniting of fractured bones of the leg. About two weeks after the massive doses were started nausea, followed by abdominal pain and vomiting, developed. It was found that hypercalcemia (excessive amounts of calcium in the blood stream) and a persistent impairment of the function of the kidneys had developed. The diagnosis was irradiated ergosterol intoxication and within two days after fluids had been forced and the patients given a low calcium diet, the symptoms disappeared.

Of particular significance is the observation of the two physicians that "The circumstances which may have contributed to this intoxication were the amount of drug which was given, the vehicle in which the drug was given (milk), the calcium content of the diet, the factor of immobilization and the season of the year."

They point out that there are great individual variations in the dose required to produce poisoning; that a seasonal variation with reactions much more frequent in the summer time is well established, and that diet also is an important factor.

Case finding in tuberculosis is a costly procedure but when measured against the estimated monetary losses caused by the disease, the expenditure for the discovery of cases seems relatively small. H. R. Edwards, M.D., et al, Milbank Memorial Fund Quarterly, Oct. 1941.


PABLUM

Books Received

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

Directory Of Medical Specialists, Certified by American Boards, 1942. Published for the Advisory Board for Medical Specialists, By Columbia University Press, New York, 1942. Price $7.00.

Pathology Of The Oral Cavity. By Lester Richard Cahn, D. D. S., Associate Professor of Dentistry, Oral Pathology, Columbia University; Fellow of the American Association for the Advancement of Science; Fellow of the New York Academy of Dentistry; Associate Fellow of the New York Academy of Medicine. A William Wood Book. The Williams & Wilkins Company, Baltimore, 1941. Price $5.50.

Carcinoma And Other Malignant Lesions Of The Stomach. By Waltman Walters, B. S., M. D., M. S., in Surgery, D. Sc., F. A. C. S., Surgeon, Mayo Clinic; Howard K. Gray, B. S., M. D., M. S., in Surgery, F. A. C. S., Surgeon, Mayo Clinic; James T. Priestly, B. A., M. D., M. S., in Experimental Surgery, Ph. D. in Surgery, F. A. C. S., Surgeon, Mayo Clinic, and Associates in the Mayo Clinic and Mayo Foundation, Rochester, Minnesota. With many illustrations. W. B. Saunders Company, Philadelphia and London, 1942. Price $8.50.

Handbook Of Hygiene. For Students and Practitioners of Medicine. By Joseph W. Bigger, M. D., Sc. D., F. R. C. P. I., M. R. C. P. (London) D. P. H., M. R. I. A., Professor of Bacteriology and Preventive Medicine, University of Dublin, Lieutenant-Colonel, Royal Army Medical Corps. Second Edition. A William Wood Book. The Williams & Wilikins Company, Baltimore, 1941. Price $4.50.

A Synopsis Of Ano-Rectal Diseases. By Louis J. Hirschman, M. D., F. A. C. S. With 182 Text Illustrations and 12 color plates. Second edition. St. Louis. The C. V. Mosby Company. 1942. Price $4.50.

Synopsis Of Materia Medica, Toxicology, And Pharmacology. For Students and Practitioners of Medicine. By Forrest Ramon Davison, B. A., M. Sc., Ph. D., M. B. Second Edition. With 45 Illustrations, including four in color. St. Louis. The C. V. Mosby Company, 1942. Price $5.75.

Management Of The Sick Infant And Child. By Langley Porter, B. S., M. D., M. R. C. S., (Eng.) L. R. C. P. (London) and William E. Carter, M. D. Sixth Revised Edition. St. Louis. The C. V. Mosby Company. 1942. Price $11.50.

Eye Manifestations Of Internal Diseases. By I. S. Tassman, M. D. St. Louis. The C. V. Mosby Company. Price $9.50.

The Heritage Of Connecticut Medicine. Published at New Haven, 1942. The Connecticut State Medical Society, 258 Church Street, New Haven, Conn. Subscription Price $2.00.

(Continued on page 28)

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**Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154. Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60*

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BOOKS RECEIVED (Continued)

A Directory Of Services For The Crippled In The State Of Illinois. Compiled by the Illinois Association for the Crippled, Inc., 35 East Wacker Drive, Chicago. Price $.50.

Medical Clinics Of North America. Symposium on Gastro-Intestinal Diseases. May, 1942. Philadelphia and London. W. B. Saunders Company.

ILLINOIS SCORES AGAINST DEATH IN 1941

Preliminary statistics for 1941 show that Illinois chalked up an enviable score against death, particularly against death from those causes which the modern medical and public health sciences are best equipped to control. Altogether there were about 3,500 *fewer* deaths reported in Illinois in 1941 than in the year before, and 11,150 *more* live births. Record-breaking low scores were established in the number of deaths attributed to typhoid fever, scarlet fever, diphtheria, tuberculosis, pneumonia, and diseases associated with childbirth, and also in the death rate from all conditions that take the lives of infants under one year of age.

POPULATION FIGURES UNCERTAIN

Since no one can say just how many people came into or went out of the State of Illinois because of military or industrial defense work in 1941, it is impossible to obtain an accurate estimate of the State's population for that year. For this reason the death and birth rates in the accompanying table have been computed on the basis of the 1940 U. S. census figure, which showed that 7,897,241 persons were then living in Illinois. Although the population changes due to immigration and emigration cannot be reliably measured, it is known that there were about 35,000 more births than deaths in Illinois in 1940, and about 49,600 more births than deaths in 1941. If, then—as seems likely—there were considerably more people in the State in 1941 than the census of April, 1940, shows, the State's true death rates would be even lower (in proportion to the actual population) than the rates shown in the table.

(Continued on page 30)

New, Effective Therapy
in Jaundice, Hemorrhage, Biliary Stasis

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Sorparin has a pronounced vitamin K activity and is a liver cell stimulant.* Both of these actions have been observed in animals and humans, with gratifying results.

A review of the therapeutic actions of Sorparin suggests the following as outstanding indications:

- Prothrombin deficiency
- Hepatic insufficiency
- Preoperative prophylaxis against bleeding
- Catarrhal jaundice
- Chronic cholecystitis

How Supplied—

Sorparin is available in tablet form, each containing Ext. Sorbus Aucuparia "McNeil," three grains. Supplied in bottles of 100, 500 and 1000.

Suggested Dosage—

Two tablets three times a day before or with meals.

**Shinowara, G. Y., DeLor, C. J., and Means, J. W.; Jl. Lab. and Clin. Med., 27:897-907, April, 1942*

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with Excellent Therapeutic Results
THERAPEUTIC EFFECT: — Elixir Bromaurate inhibits the coughing center, relieves the spasmodic attacks and cuts short the period of the illness.
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ILLINOIS SCORES (Continued)

BIRTH RATE

By the same token, of course, the birth rate—which appears to have jumped in 1941 from the 1940 level of 15.6 per 1,000 population back up to the 1930 level of 17 births per 1,000—would not in reality be quite so high. It may be assumed, however, that the rates here shown afford a valid index to the general trend, and that a significant upturn in the Illinois birth rate has in fact occurred. The State's birth rate has been trending upwards rather steadily since its all-time low of 13.9 per 1,000 in 1933, when there were at least 25,000 fewer Illinois babies born than were born in 1941. The highest recorded birth rate in the State, 22.2, was established shortly after the last World War, in 1921, when there were about 12,500 more Illinois births reported than in 1941.

INFANT MORTALITY

In 1921, however, a far greater proportion of the babies born were lost during the first year of life, for the infant death rate at that time was 72.5 per 1,000 births. This means that one in every 14 babies born failed to survive its first year. In 1941 the State's low 1940 record of

(Continued on page 33)

BILE ACID THERAPY
In Cholecystitis
The intensified flow of thin liver bile produced by Decholin (dehydrocholic acid) encourages removal of inspissated accumulations from the bile passages and facilitates biliary tract drainage. Subjective relief usually follows its administration; not infrequently objective improvement is discernible roentgenologically.
Jenkinson, observing the influence of Decholin in chronic cholecystitis, states: "There was usually a marked improvement of the symptoms following medical management including dehydrocholic acid (Decholin)."[1]
Decholin is contraindicated in complete obstruction of the common or hepatic bile duct.
Riedel - de Haen, Inc. New York, N. Y.
Decholin
1. Jenkinson, E. L.: J. A. M. A. 107:755 (Sept. 5) 1936.

ILLINOIS SCORES (Continued)

35.1 infant deaths per 1,000 births was reduced still further, to 34 per 1,000. At the 1941 rate only one in 30 babies born failed to survive its first year. This is a real credit to the prenatal, maternal, and infant care programs of Illinois physicians and health workers, for if the 1940 infant health conditions had prevailed in the State in 1941, fully 140 Illinois babies who were saved last year would have been lost. If the 1921 infant mortality rate had obtained in 1941, the loss of infant life in Illinois would have been more than double what it was. In actual figures there were saved in Illinois last year the lives of 5,165 babies that would have been sacrificed if the 1921 conditions had prevailed.

MATERNAL MORTALITY

As might be expected, the State's progress in programs for maternal and infant health and welfare is also reflected in the 1941 maternal mortality experience. So great was the improvement in 1941 over 1940 that there were saved in 1941 no less than 58 Illinois women who would not have survived the experience of becoming mothers, had the previous year's health conditions continued. For every maternal life lost in the State in 1940 some 345 live babies were born. For every maternal life lost in the State in 1941 fully 400 live babies were born. This is indeed just cause for pride, and much of the credit for the achievement of this new record in Illinois should go to the expectant mothers and fathers who are wise enough to obtain competent medical care for the mothers early in pregnancy, and to keep the mothers under the adequate medical supervision until at least six weeks after the birth of the baby.

The figures also indicate that the proportion of babies born dead is being lowered as a result of the present maternal and infant health activities in the State. In 1933, the year of the lowest recorded birth rate in Illinois, when at least 25,000 *fewer* babies were born, there were about 50 *more* stillbirths than occurred last year, and nearly 200 *more* maternal deaths. The stillbirth rate in 1921 was 36.6 per 1,000 live births. In 1933 it was 29.5 per 1,000. In 1940 it was down to 25.7 per 1,000, and in 1941 it was reduced still further, to 23.6 stillbirths per 1,000 live births.

(*Continued on page* 34)

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to the rescue in

SUNBURN



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YEAR 'ROUND USE of NUPERCAINAL for speedy mitigation of pain and itching includes conditions such as mild burns, dry eczema, decubitus, intertrigo, fissured nipples, etc. Your pharmacist can supply NUPERCAINAL in one-ounce tubes and from one-pound jars.

TURN IN A CALL FOR LITERATURE

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C · I · B · A

ILLINOIS SCORES (Continued)

MALARIA AND TYPHOID FEVER

To sanitation and the control of carriers goes much of the credit for the important recent reduction in the number and rate of deaths in Illinois ascribed to malaria and typhoid fever. Mosquito-abatement programs in various sections of the State have doubtless played a part in attaining the new low score against deaths due to malaria. Five years ago, in 1937, the lives of some 38 individuals in Illinois were claimed by malaria, with a death rate of .48 per 100,000 population. Neither the number nor rate changed materially until 1940, when the malaria death toll in Illinois was cut just about in half. In 1941 the 1940 toll was cut in half again, establishing the lowest malaria mortality record in the State's history: 8 deaths, or a rate of .1 per 100,000. It should be remembered, however, that todays population movements are a distinct threat to this impressive record. So long as the anopheles mosquito exists in Illinois, it needs only the arrival of numbers of persons infected with malaria to enable the mosquito to spread the disease more widely in the State.

With regard to the continued control of typhoid and paratyphoid fevers the current population shifts bring similar potential hazards. As soon as a "boom town" places too great a strain on its public water supply system and sewage disposal works, it needs only the arrival of a careless typhoid fever carrier to spread the typhoid germ in that town. For this reason the achievement of new all-time low records (294 cases and 28 deaths) in the control of typhoid fever in 1941, in the face of the sudden growth of many industrial communities, is particularly striking.

SMALLPOX AND DIPHTHERIA

Although diphtheria and smallpox are considered the most readily preventable of the communicable diseases, Illinois still lags behind other states in the control of these disease. (See ILLINOIS HEALTH MESSENGER, May 1, 1942.) It is true that for the last three years Illinois has not had any *deaths* from smallpox, but over the period of the last fifteen years the State has averaged about three smallpox deaths annually. And even in 1941 there were more than

(Continued on page 36)

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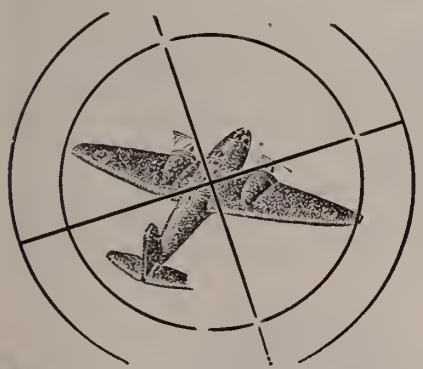
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ILLINOIS SCORES (Continued)

a hundred *cases* of smallpox reported in Illinois. So long as large numbers of people are unvaccinated, cases will occur. And so long as cases occur, the State cannot be safe against the possibility of deaths from this cause.

Diphtheria, too, may be counted upon to flare up when the people—especially the infants and children—are not immunized. Only during the last two years in Illinois have the total annual case reports of diphtheria been less than a thousand. It is gratifying to note that diphtheria claimed fewer Illinois lives (58) in 1941 than in any earlier year in the State's public health history, but the fact remains that the disease is preventable and that the people in every community have it in their power to institute compaigns for immunization.

PNEUMONIA

For the last six years in Illinois the number of cases of pneumonia reported in the State has been from about 12,500 to about 16,000 annually; but despite this fluctuation in case reports, the number of annual deaths from pneumonia has gone steadily down since 1936. In that year the State's pneumonia death rate was 80.4 per 100,000 population. In fact, in every year of reliable record, before the advent of the sulfonamide drugs for the treatment of this disease, the Illinois death rate from pneumonia was higher than 60 per 100,000 population. By 1940 this rate had been reduced to 47.4, and in 1941 the rate was brought down to 40.2. A great deal of the saving of human life which this improvement represents has been made possible through the pneumonia control program of the Illinois Department of Public Health. The Department provides physicians in Illinois with type-specific pneumonia serum, sulfathiazole, and sulfadiazine.

TUBERCULOSIS

Although the tuberculosis death date in Illinois has been trending downwards every year since the establishment of the State Department of Public Health in 1917, and a record-breaking low rate of 43.9 tuberculosis deaths per 100,000 population was attained in 1941, tuberculosis may now find in overcrowded defense areas the very conditions which tend to favor its spread. If the disease is to be held in check during the war, Illinois communities will need to make every effort to discover all existing cases, see that the patients are isolated and treated, and protect the well persons who might otherwise be exposed to the germs.

NOT SO FAVORABLE

Heart disease, the leading cause of death, does not of course take an increasingly higher toll every single year. In 1941, as in 1937, 1929, and 1921, there was a slight let-up in the mounting annual number of deaths attributed to this cause in Illinois. Although the 1941 rate of heart disease deaths was lower than the 1940 rate, it was higher than the rate in 1939 and all preceding years of record.

Deaths from heart disease and cancer, of course, are apt to occur among persons who have reached middle and later life. If the health conditions of earlier times still existed, many of these persons might have succumbed in childhood or young adulthood to communicable diseases from which modern public health measures have protected them.

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ILLINOIS SCORES (Continued)

More deaths were reported as due to cancer in Illinois in 1941 than in any other year to date. It is to be hoped that the new cancer control program of the State Department of Public Health will help to stem the tide of cancer deaths in the future by encouraging the early diagnosis and proper treatment of cancer cases.

Accidents also continue to hold a leading place in the list of causes of death in Illinois, with about 250 more accidental deaths reported in 1941 than in 1940.

Since 1941 was a year in which the cycle of measles prevalence reached epidemic proportions, the upturn in measles deaths is hardly surprising.

The 40 per cent increase over the 1940 total of deaths ascribed to whooping cough cannot be explained, however, on the basis of a proportionate increase in case reports. There were only about 20 per cent more cases of whooping cough reported in 1941 than in the previous year. Since this disease is so apt to be fatal in very young children, parents would do well to have their physicians give infants the advance protection of whooping cough vaccine.

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An airplane pilot who is not provided with oxygen begins to lose his mental and physical efficiency at an altitude of about 12,000 feet, Harry G. Armstrong, Toronto, Can., states in *Hygeia, The Health Magazine.* His symptoms are more pronounced at 18,000 feet. Between 18,000 and 22,000 feet his actions are like those of a drunken man, and he becomes either sleepy or very active with outbursts of laughter or rage. At about 25,000 feet unconsciousness occurs and unless descent to a lower altitude is made death results within a few minutes.

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ARMY STARTS SPECIAL SERVICE FOR FACE AND JAW CASUALTIES

All Medical Personnel, From Advanced Units Back To General Hospital, Being Trained In Care Of Such Wounds, General Says

A special program for the care of face and jaw casualties has been inaugurated by the Army Medical Department, Leigh C. Fairbank, D. D. S., Sc., Brigadier General and Assistant to the Surgeon General, United States Army, Washington, D. C., reports in the current issue of *War Medicine,* published bimonthly by the American Medical Association in cooperation with the Division of Medical Sciences of the National Research Council.

It no longer will be necessary for such casualities to be transported to large hospitals far to the rear of the front line before receiving any of the special care such types of wounds require. All medical personnel, from that of the battalion aid station to the general hospitals far to the rear of the combat zone, are being given special training in the care of such wounds.

As General Fairbanks points out, "New developments in restorative aspects of surgical prosthesis (replacement of an absent part by an artificial one) and dental repair afford possibilities today which far surpass the facilities available in past years." The program described by him is aimed at assuring the availability of these facilities.

The General says that "The American soldier has a right to expect adequate protection against disease, through treatment when sick and skilfull surgical care if wounded in battle. He anticipates either a return to duty or restoration

(Continued on page 40)

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"The facilities for the care of face and jaw casualties are limited in the foremost medical installations (at the front) but increase as the patients move rearward to medical units which are larger and more completely serviced. The personnel, however, in each battalion aid station and every other type of medical installation in the division receive thorough training in first aid treatment for maxillofacial wounds. Such treatment provides for the arrest of hemorrhage, removal of foreign bodies from the mouth and throat, establishment of an adequate respiratory airway, application of dressings and bandages for the approximation and control of displaced soft tissues and bone fragments and, finally, for the safe transportation of the patient by litter and/or ambulance to the rear. . . ."

General Fairbank points out that the distribution of medical units in the Army has been so arranged that at least one medical officer and one dental officer with special training for the care of face and jaw casualties are available in each surgical and evacuation hospital located in the combat zone.

Inasmuch as reconstructive surgical procedures are not attempted in the combat zone,

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ARMY SPECIAL SERVICE (Continued)

larger emphasis on the training of personnel operating in this area is on the early treatment of face and jaw casualties.

He points out that for several months equal numbers of medical and dental officers have been pursuing a thirty day course in maxillofacial surgery at the Army Medical Center, Washington, D. C., under a program of instruction prepared by the Subcommittee on Plastic and Maxillofacial Surgery of the Division of Medical Sciences of the National Research Council. The subcommittee has recommended a ninety day training course for the medical and dental personnel to be assigned to general hospitals for the surgical reconstruction and dental restoration of patients with face and jaw injuries.

Under the general program for the development of maxillofacial teams and the training of select medical and dental personnel, the Army dental officer no longer is solely concerned with those duties generally ascribed to a dentist in civilian life. The dental officer is an integral part of each medical unit and must complete the training routine, covering the early care of all types of gunshot wounds, all kinds of gas intoxication and other battle emergencies. As General Fairbank describes it, "This training makes him a valuable assistant to the medical officer in every aid station, clearing station and hospital. In bone surgery and plastic repair of face and jaw casualties, the dental surgeon participates as an assistant to the oral and plastic surgeon. . . . Superior results are assured through the cooperative efforts of the medical and dental specialists.



"The training of dental personnel in the various phases of oral and plastic surgery is not based on the intention of utilizing them as plastic surgeons or giving them the status of surgeons in the reconstruction of the face and jaws. This training is solely to provide more thoroughly a broad understanding of the problems in this field and to assure the full employment of the many aids which the dental surgeon and the supportive dental agencies can provide in each phase of the maxillofacial service."

Where poverty, bad housing, overcrowding, malnutrition and other bad environmental factors coexist, as in Cyprus, tuberculosis need not assume serious proportions so long as massive infection is controlled. Per contra, experience at Saranac and Preston Hall shows that in communities where large numbers of open cases are congregated, but where there is no poverty, no bad housing, no overcrowding, no malnutrition — but where close watch is kept on families as a whole — healthy individuals nearly all escape.

The lesson is this: Infection and environment must be considered together and not separately as we have been wont to do. Infection itself is an environmental factor. Germs may lurk in dark, damp places but the darkest and dampest is the cavity in the lung which remains uncontrolled or uncollapsed, and all the public health measures in the world will not sanitate these, the most important source of infection. Infection being present, other environmental factors must be brought up to a specified standard if massive infection is to be avoided. In Britain now . . . let us search out the source of infection, many of them unknown, and eradicate them, not waiting for the interplay of other environmental factors which sooner or later will lead to the spread of disease. Editorial, Lancet, Jan. 24, 1942.

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KOCH CANCER TREATMENT MEETS THE LAW

Discussing the recently reported federal action against the Koch Laboratories, Inc., of Detroit, *The Journal of the American Medical Association* for April 18 says that perhaps the incident will seem to the other charlatans in the field of cancer to be a "handwriting on the wall." Under the heading "Koch's Cancer Treatment Meets the Law," *The Journal* says:

"*The Journal* has repeatedly called attention to the promotion of products by the Koch Laboratories. Again and again it has urged federal agencies to display an interest in the matter. The Detroit *Free Press* for Sunday, April 5, notes that 'Federal agents took action Saturday against Koch Laboratories, Inc., 8181 E. Jefferson, by arresting Louis Koch, the concern's secretary treasurer, in Detroit and Dr. William F. Koch, president, in Delray Beach, Fla.' It notes that the Kochs 'will face charges of violating the Federal Food, Drug and Cosmetic Law on 11 specific charges.' The *Free Press* reports that Dr. Koch was arrested on a removal warrant and was released on a $5,000 bond pending a hearing in Detroit on April 15. Assistant United States Attorney John C. Ray is quoted as saying with regard to the concern's synthetic antitoxin 'A thimbleful of this liquid sells for $25 to practitioners and they get as much as $300 from patients. Chemical analysis shows that the dilution is so infinitesimal that it would be like dumping a cocktail in the Detroit River at the foot of Woodward and expecting to get a kick out of the water going over Niagara Falls.' The *Free Press* reports that 'Doctors said it was something like a molecule, so tiny that it can't be seen, to every 300,000,000 gallons of water.' The United States Attorney, it is reported, said that the Koch brothers were arrested after a prolonged investigation. The *Free Press* called attention to the fact that 'Dr. Koch was named defendant in a malpractice suit in Detroit in 1934 and a jury returned a $25,000 verdict gainst him while he was head of the Koch Cancer Foundation. Later the verdict was held excessive and in a second trial a jury reduced the amount to $5,500. The suit was started by Alfred A. Fortner, who told the jury Dr. Koch diagnosed an infected knee as a cancer.' The procedure of diagnosing as cancer a condition which is not malignant, and then expediting an effective treatment, is old in cancer quackery. For a number of years Koch has issued promotional material which contained reports of an unscientific character with regard to cases in which his preparations had been employed. More recently he circularized physicians with regard to what he refers to as '1:4 Benzoquinone,' claiming, without the slightest bit of scientific reference . . . that it is the effective ingredient in the sulfonamide preparations. Besides Koch there still remain a few other charlatans in the field of cancer who merit federal attention. Perhaps the Koch incident will seem to them a "handwriting on the wall.' "



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